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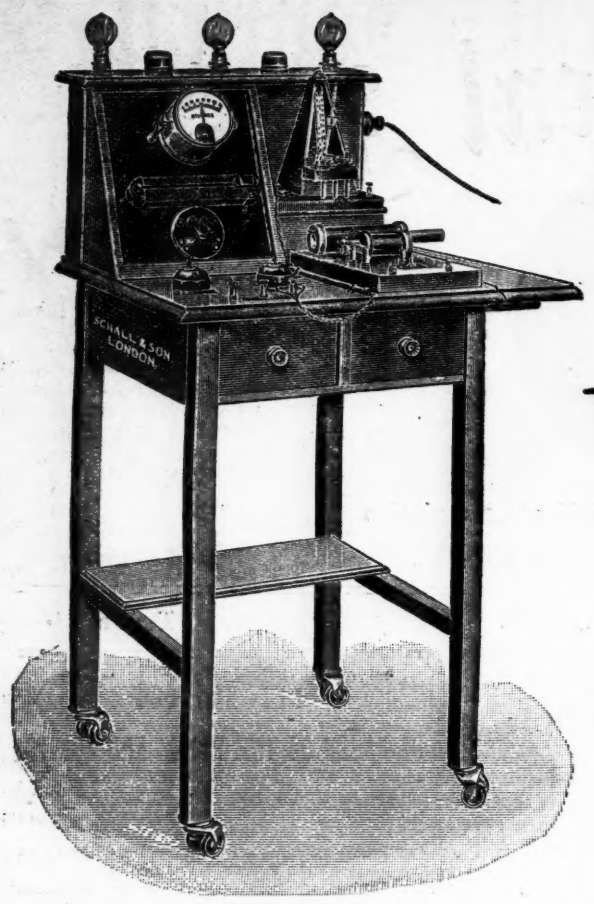

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ON
DISAPPOINTMENTS AFTER GASTRO-ENTEROSTOMY.

DELIVERED AT THE LEEDS GENERAL INFIRMARY.

BY
SIR BERKELEY MOYNIHAN, K.C.M.G., C.B., M.S., F.R.C.S.,
LEEDS.

EVERY operation in surgery, even the best, most exquisitely performed, may bring its disappointments. The operation of gastro-enterostomy, carried out in appropriate cases by a competent operator, is probably the most successful of all surgical procedures of equal magnitude, and it is certainly among the safest of those entitled to the description of major operations. In my last series of more than 300 non-malignant cases I have not lost a patient, and in recent years a temporarily unsatisfactory result has been extremely rare.

When we speak of disappointments after gastro-enterostomy, we must first remember that it may not be the fault of the operation but of many other circumstances if things go wrong. The success or failure of an operation may be due not only to the procedure itself, but also to its performance in cases which did not need it.

It falls to my lot to see many cases in which the operation of gastro-enterostomy has failed, and in reviewing these I find that they are capable of tabulation in the following manner:

A. THE OPERATION HAS BEEN PERFORMED IN THE ABSENCE OF ANY ORGANIC LESION JUSTIFYING IT.

This is by far the most frequent cause. In every ten cases of unsatisfactory results nine are due to this cause, and to this alone.

The conditions for which the operation has been needlessly performed are two:

(*a*) IN FUNCTIONAL DISORDERS OF THE STOMACH.

The more we know of organic diseases of the stomach the fewer do those cases formerly considered functional progressively become. It is not so long since a patient suffering from duodenal ulcer, for example, was frequently told that he was the victim of "acid gastritis," or "acid dyspepsia," "hyperchlorhydria," or "neuralgia of the stomach," all of which were said to be functional states.

When I first called attention to the symptoms and to the clinical diagnosis of duodenal ulcer, I found it difficult to persuade many of my friends that I was speaking of a common organic lesion which could be demonstrated during an operation to any intelligent onlooker.

To-day every one agrees that these symptoms are in truth due to a structural lesion and not to a vice in the chemistry or a defect in the motility of the stomach. And this holds good of other "functional diseases" of the stomach also. Inquiry upon the operation table reveals organic causes.

There still remain, however, a number of difficult cases of functional troubles associated with atony of the stomach or prolapse of this and other abdominal organs. Such cases may be difficult to treat by medical means, massage, exercises, and so forth; but they are often made very much worse by the performance of a short-circuiting operation. If such patients vomited before, they vomit still, though the character of the vomit is altered by the addition of large quantities of bile. In a few instances the patients will say that they are neither better or worse, and I have known one or two who incline to think their condition a little better than it was before operation. But the exceptions are very few to the rule that in these conditions surgical measures are harmful or disastrous.

In such patients the only further operative treatment which the surgeon should undertake is the reparation of the mistakes of his too enterprising predecessor. The anastomosis must be undone, and the stomach and intestine returned as far as possible to their original condition. If there is a moderate degree of visceral prolapse great relief may be obtained from the application of a Curtis belt or of corsets.

(*b*) IN CASES OF CHRONIC DISEASE ELSEWHERE.

For several years I have endeavoured on many occasions to emphasize the importance of verifying, after the abdomen is opened, the original diagnosis of ulcer of the stomach or of the duodenum, before beginning any operation designed to relieve the patient of his symptoms. An ulcer of the duodenum or of the stomach, if the cause of symptoms so long continued, or so severe as to justify an operation, is always a visible, demonstrable, palpable lesion. If no ulcer is found no operation should be performed. The day is long past when a surgeon is entitled to accept a clinical diagnosis, however confidently made, as a sufficient warrant for an operation. The lesion supposed to exist must be recognized at the time the abdomen is opened before any further steps are taken with the intended operation. This rule, which should appeal to every one, is still violated with no little frequency. If no ulcer is found, a search should then be made elsewhere in the abdomen for a possible cause of those symptoms which have been attributed to a chronic ulcer. Failure to observe these precautions, and to remember this unalterable rule, has resulted in the performance of gastro-enterostomy for conditions remote from the stomach. The operation of gastro-enterostomy has been performed for the following diseases:

I. CHRONIC APPENDICITIS.

This is the commonest of the mistakes in this class. Many physicians and surgeons have long realized how exact the mimicry of the symptoms of ulcer of the stomach or of the duodenum may be in cases of chronic appendicitis. Nine years ago[1] "appendix dyspepsia," a condition in which symptoms closely resembling those due to gastric ulceration were caused by a chronic lesion in the appendix, was described, and special attention was called to the presence of haematemesis or melaena in these cases. Haematemesis is more common in other diseases than in gastric ulcer, of which it is not a very frequent symptom. The occurrence of haemorrhage should therefore raise at once a suspicion, not only of ulcer but of chonic appendicitis, splenic anaemia, or cirrhosis of the liver.

II. TUBERCULOUS DISEASE OF THE INTESTINE.

Tuberculous disease of the ileum, or caecum and ascending colon has been present in a small number of cases where gastro-enterostomy had been performed in the absence of any ulcer of the stomach or duodenum.

Tuberculous disease of the intestine appears to be a common disorder in England and in Scotland. The impurity of the milk supply, of course, is responsible for this. Manchester has recently discovered that 35 per cent. of the milk brought to it contains living tubercle bacilli, and a similar alarming discovery could doubtless be made in other towns if inquiry were instituted. The symptoms produced are, as a rule, clear evidence of tuberculous disease; but occasionally a patient may present such symptoms as make a diagnosis of duodenal ulcer not impossible. There are pyloric spasm, hyperacidity, pain, and vomiting. I have found tuberculous disease of this kind in two medical men who believed themselves to be the subject of duodenal ulcer, and whose belief was strengthened by other opinions. Both were a little dismayed when they learnt that gastro-enterostomy had not been performed; but both, I am glad to say, are cured by their operations. I have had one patient sent to me as a case of "gastric ulcer" upon whom I performed colectomy for hyperplastic tuberculous disease of the caecum.

III. CHOLELITHIASIS, OR CARCINOMA OF THE GALL BLADDER.

Cholelithiasis, in all cases except those in which a single cholesterin stone is present, declares its presence, even in early stages, by the symptoms of dyspepsia, and often also of hyperacidity. The pain of flatulence and of heaviness comes with fair regularity about half an hour after a meal. There may be vomiting, and there is often much complaint of acidity. A very large proportion of the cases of cholelithiasis, at a time when no colic has occurred, are diagnosed as cases of gastric disease.

The way to prevent this, and so many other mistakes, is to examine all parts of the abdomen likely to be affected by disease, before the purposeful part of the operation is begun.

IV. CIRRHOSIS OF THE LIVER, WITH HAEMORRHAGE.

In cirrhosis of the liver there is often dyspepsia; flatulence, heaviness, soreness, frequent eructations, with loss of appetite and a foul tongue, are common symptoms. Haematemesis or melaena, or both, may be profuse. The absence of orderly development and precision in the time and character of the symptoms makes the differential diagnosis between cirrhosis and duodenal or gastric ulcer rarely difficult.

V. SPLENIC ANAEMIA.

I have known a short-circuiting operation to be performed in this disease. The haemorrhage is often very abundant. The most copious haematemesis I have ever seen occurred in a patient suffering from this condition upon whom I was asked to operate for duodenal ulcer. I have twice removed the spleen in cases of splenic anaemia from patients who were sent to me as cases of duodenal ulcer. In both no ulcer nor any scar was seen.

VI. TABES DORSALIS.

I have seen five patients who were operated upon in this disease after a mistaken diagnosis of "gastric ulcer" had been made. The gastric crises, and the other dyspepsias seen in tabetic patients, have so little akin to the symptoms produced by organic diseases of the stomach that there is no excuse for the mistake. I have had one patient who, suffering from tabes, had also the symptoms of duodenal ulcer. I operated upon him, demonstrated the ulcer, and performed gastro-enterostomy.

VII. DISSEMINATED SCLEROSIS.

I have seen one patient with this disease upon whom gastro-enterostomy had been performed; the surgeon found no ulcer, though the symptoms had suggested its presence to him. In the crises of the attacks of pain the stomach became greatly distended.

VIII. THE VOMITING OF PREGNANCY.

I have known two patients submitted to the operation of gastro-enterostomy for this condition under a mistaken belief that a gastric ulcer was present as the cause of the symptoms. Vomiting is neither a common nor, as a rule, a serious symptom in the great majority of cases of gastric ulcer.

IX. IN LEAD POISONING.

I have seen one patient upon whom gastro-enterostomy had been performed when neither open ulcer nor old scar could be found. The evidences of lead poisoning—colics, blue line on the gums, etc.—were quite clear at the later stage.

X. IN PROLAPSE OF KIDNEY.

Many years ago Sir F. Treves and Sir William Bennett described a group of cases in which a loose kidney had pulled upon the gall bladder and ducts to such a degree as to cause jaundice. The same drag may be made upon the duodenum and symptoms of pain and vomiting be produced. Loose kidneys comparatively seldom produce symptoms of any consequence, but there is no doubt of the existence of the conditions just described.

XI. COLIC ADHESIONS.

Many patients who suffer from vague dyspepsias, ascribed perhaps to intestinal stasis, or to chronic appendicitis, disclose on the operation table this condition: A membranous band, broad above, where it takes origin from the posterior abdominal wall, the under surface of the liver, the pelvis of the gall bladder, the cystic duct, and the duodenum, narrows below as it crosses the ascending colon to be lost on the peritoneum, to the inner side of the ascending colon, and on the enteric mesentery. Below this band, which is quite different from a "Jackson's membrane," the caecum and the ascending colon are distended and soggy. Very often the appendix looks turgid, thick, and stiff. Removal of the appendix, to which the troubles are ascribed, gives little or no relief. Division of the band allows adhesions to re-form. The only practice likely to give good results is the removal of the terminal ileum, caecum, and ascending colon. The performance of gastro-enterostomy, of course, makes matters worse.

XII. EPIGASTRIC HERNIA.

A hernia of this kind, however small, may cause teasing and protracted symptoms. The chief complaint is of indigestion, dragging, heaviness, etc. A careful examination for this condition should always be made.

B. THE OPERATION HAS BEEN INCOMPLETE.

It appears to be still a custom in dealing with duodenal and gastric ulcer to perform gastro-enterostomy only, leaving the ulcer itself untouched, and making no search in the abdomen for other conditions. As these ulcers are probably often, if not always, secondary to some infection which may exist within the abdomen, such a search should be a necessary part of every operation, provided that the condition of the patient will warrant it. Chronic appendicitis is very frequently associated, probably in a causal relation, with ulcers of the stomach and duodenum. It is better, therefore, always to remove the appendix. The division of the membrane which causes a "Lane's kink" may also be practised. The gall bladder should always be examined for the presence of stones, or of that subserous deposit of fat, especially near the pelvis, and the cystic duct, which is, I hold, the first sign visible from the exterior of an infection of the walls of the gall bladder from within. Either the removal of stones and drainage of the gall bladder or removal of the gall bladder may be necessary.

But above all the ulcer itself should be dealt with in such manner as to secure that all large vessels running into it are ligatured, and that the risk of subsequent perforation is lessened or prevented by the infolding of the ulcer, and by the covering over of the first part of the duodenum by the two omenta. Cases of fatal haemorrhage from a duodenal ulcer, weeks or months after gastro-enterostomy had been performed, are recorded by Kocher, Quénu, Sir F. Eve, and others. And Mr. Corner has related the story of the fatal perforation of a duodenal ulcer in a patient upon whom I had operated three years before. Other cases of perforation in similar circumstances are known to me, and some are recorded in the literature. Merely to perform gastro-enterostomy in cases of duodenal ulcer is therefore to leave open many chances of subsequent disaster. A direct dealing with the ulcer is always necessary. In patients upon whom gastro-enterostomy alone has been performed, there may be a recurrence of all the original symptoms of duodenal ulcer. In such cases one of two conditions is present—either a jejunal ulcer, or a revival of activity in the duodenal ulcer. If the latter, the infolding of the ulcer, and its protection by a double covering of the omenta, will remove the symptoms at once. An *x*-ray examination before the operation will probably show that much of the food passes by the pylorus. I rarely practise either excision of the ulcer, exclusion of the pylorus, or partial duodenectomy and gastrectomy in cases of duodenal ulcer, for the results of the simpler operation of gastro-enterostomy are hardly to be improved.

The infolding of the ulcer of course narrows the pylorus for a time at least, but it is not with the object of producing obstruction that the infolding is done. As A. B. Mitchell has shown, the infolded ulcer very rapidly disappears.

C. DEFECTS IN TECHNIQUE.

The operation has been performed, rightly or wrongly, and certain technical errors cause distressing symptoms—pain, vomiting, diarrhoea, etc.

The chief of these occur when—

1.

The anterior or the posterior operation has been performed, and a long jejunal loop has been left. This loop may, with difficulty, be emptied; it may become "waterlogged," and an obstruction may develop at the afferent opening into the stomach. "Regurgitant vomiting" occurs, only to be relieved by lavage, or in severe cases by the performance of an entero-anastomosis, which checks it at once.

2.

With a short or a long loop, the efferent piece of jejunum has been blocked as a consequence of a kink, or from adhesions, between the intestine on the one side, and the abdominal wall, omentum, transverse colon or mesocolon, and loops of small intestine on the other. Regurgitation occurs here also. Regurgitant vomiting means high intestinal obstruction.

3.

A short-loop posterior gastro-enterostomy has been performed. At the time when the jejunum was lifted up to oppose to the stomach before suture, adhesions were found binding it to the under surface of the transverse mesocolon, an exaggeration of the ligament of Treitz. These were divided and a raw surface left on the jejunum, proximal to the opening made to anastomose with the stomach. Adhesions then formed and caused obstruction of the proximal part of the jejunum between the duodeno-jejunal flexure, and the opening into the stomach. Mr. Nicoll of Glasgow describes this condition.

4.

The jejunum has been rotated round its longitudinal axis at the time when it has been approximated to the stomach. This twist may be quite enough to cause an obstruction.

5.

The opening is too small. I have operated upon patients suffering from pyloric obstruction when a short-circuiting operation had been performed a few months before, and have found the opening too small to admit the tip of my little finger. A gastro-enterostomy opening should always be large; not less than 2½ in. in length.

6.

The opening is badly placed. The opening should always reach the greater curvature and is best placed in line with the oesophagus. Whether the jejunal direction is vertical, as I prefer it, or inclines from left to right, or right to left matters very little.

I have found the opening, originally made too small, lying midway between the curvatures, and in one case actually on the lesser curvature at the incisura. In such cases an *x*-ray examination will show the existence of a pool of unemptied stomach contents below the anastomosis. By manipulation the stagnant fluids can be pressed out of the anastomotic opening.

7.

There has occurred a hernia of the small intestine through the unclosed rent in the mesocolon. In one of my early cases (in 1902) I did not stitch the cut edges of the opening, made through the transverse mesocolon, to the suture line. A great part of the small intestine escaped through the opening into the lesser sac and became strangulated; the patient died. It is, I think, important to close the opening in the mesocolon very carefully. One of the ablest surgeons in the world told me of a case in which he did not suture the opening very completely, leaving a gap at the proximal end of the jejunum. A small knuckle of bowel crept in and became strangulated. An operation on the fifth day revealed the condition. The patient recovered.

The edges of the mesocolic opening should be sutured either to the stomach or to the suture line. If they are attached to the jejunum alone the stomach may withdraw into the lesser sac, and so cause a kink or obstruction near the stoma.

8.

The use of unabsorbable sutures—silk, linen, thread, thick chromicized catgut. The work of Wilkie seems to show that catgut is to be preferred to any other suture material. It remains long enough to ensure firm union between the viscera, and disappears in a few weeks' time. The catgut should be as fine as is compatible with adequate strength. I use the finest chromic gut (000000) for both sutures.

In many cases of haemorrhage occurring some weeks or months after the operation the liberation of an unabsorbable suture may be the cause. Such sutures may be seen hanging from the line of anastomosis when later operations are performed. I have found a piece of stout chromicized catgut three years and nine months after the original operation. Of the two sutures it is, I believe, certain that the outer one, the sero-serous, is the one so long retained. The inner stitch, which apposes the cut edges of the mucous membrane, is probably always discharged within a very few weeks, whatever the material of which it is composed. The use of linen and silk is perhaps responsible in some degree for the development of jejunal or gastro-jejunal ulcers. The sutures have to work their way out, and so delay healing, or start an ulcer at any point. I have twice found small ulcers near the retained knot of an unabsorbable suture.

9.

Ventral hernia may follow an imperfect closure of the abdominal wound; or after any closure if there be persistent severe coughing, or vomiting.

D. LATE COMPLICATIONS MAY DEVELOP AFTER AN OPERATION PERFORMED, IN A CASE REQUIRING IT, WITHOUT ANY TECHNICAL FLAW.

1. *Jejunal Ulcer.*

This is by far the most serious of all the sequels of gastro-enterostomy. The ulcer may be at the suture line, or near it; it is generally small, and as a rule is single.

Its causes are not known with certainty. Among them are, probably, the use of unabsorbable sutures, inaccurate apposition of mucous membrane, bruising of the part of the viscera embraced by clamps with the result that a haematoma forms, a continuance of the cause of the original duodenal or gastric ulcer, and a persisting hyperchlorhydria.

It may at least be said that an avoidance of these faults or treatment of these conditions will almost certainly prevent the development of any fresh ulceration. The diagnosis of jejunal ulcer is not as a rule at all difficult. There are several clinical types which I have described in my book *Abdominal Operations*. There are several methods of operative treatment, not all of them satisfactory and some of them very difficult. Recently I have performed partial gastrectomy in such cases, removing the stomach up to the proximal side of the anastomosis, and all that part of the jejunum engaged in the junction.

The proximal end of the distal limb of the jejunum is closed and the side of it united to the cut end of the stomach; the distal end of the proximal segment is united to the distal portion of the jejunum just below the anastomosis with the stomach. I have known jejunal ulcer to develop in two patients after gastro-enterostomy performed in the absence of any lesion in the stomach or duodenum.

2. *Carcinomatous Change in a Chronic Gastric Ulcer.*

This may occur after an operation which has, for a time, seemed perfectly successful. I have now in my wards a patient upon whom I performed gastro-enterostomy for chronic gastric ulcer thirteen years ago. At the time of the recent operation a carcinomatous ulcer was present at the site of the former simple ulcer. In earlier days I have met with several cases in which malignant disease developed at the site of a chronic ulcer after operation. In the cases in which the cancer is found within, say, three or four years it may fairly be argued that the growth was present at the time of operation, for gastric cancer may increase very slowly. But in cases occurring later than this the great probability is that the change from a simple to a carcinomatous condition has taken place.

Nowadays I perform, as a rule, only two operations for cases of chronic gastric ulcer. If the ulcer is not near the oesophagus, and is of average or small size, I perform partial gastrectomy. If the ulcer is very large, burrowing deeply into the liver or the pancreas, and near the cardiac end of the stomach I perform gastro-enterostomy in Y, and into the proximal limb of the jejunum, below the duodeno-jejunal flexure, I introduce a tube, performing jejunostomy. Through this tube the patient is exclusively fed, for few or many months, until an *x*-ray examination suggests that the ulcer is healed.

In the case of the largest gastric ulcer I have ever seen, the ulcer occupying the whole of the lesser curvature and extending deeply into the liver, the patient did not take one spoonful of food or drink by the mouth for two years and nine months. I gave her permission to do so at the

end of two years, when the ulcer appeared to be healed, but she prolonged at her own desire the period of jejunal feeding for nine months.

The remembrance of her intense suffering before the operation, and her perfect comfort and satisfaction when she took food only by the tube, weighed with her in making this decision. The jejunostomy opening has been closed for nearly three years, and she remains perfectly well, free from pain, and is now 4 st. heavier than when the original operation was performed.

Symptoms after Unsuccessful Gastro-enterostomy.

The symptoms present in cases of unsuccessful gastro-enterostomy are chiefly four—pain, vomiting, haemorrhage, diarrhoea.

Pain may be due to:

1. A revival of activity in an unhealed ulcer.
2. The presence of a jejunal ulcer.
3. Adhesions crippling the proper action of the stomach or jejunum.
4. The presence of some other disease which has been overlooked at the operation—chronic appendicitis, cholelithiasis, and the other diseases enumerated above.

Haemorrhage may be due to:

1. The separation of a suture.
2. Continuing activity in a duodenal or gastric ulcer.
3. A jejunal ulcer.
4. The presence of some other disease which has been overlooked, such as splenic anaemia, cirrhosis of the liver, etc., as enumerated above.

Vomiting may be due to:

1. Obstruction as a result of any of those technical defects in the operation which I have already named.
2. Functional causes.

Diarrhoea may be due to:

1. Too rapid emptying of the stomach.
2. Some pathological condition of the intestine, or other viscera, which has been overlooked.
3. The offensive character of the escaping contents.

The too rapid emptying of the stomach is sometimes a cause, or is supposed to be the cause, of many discomforts, intestinal uneasiness and turmoil, and diarrhoea. When a patient suffering in this way is examined by the *x* ray the stomach is seen to empty itself very rapidly—perhaps in ten or twenty minutes, the food flowing through the opening into the intestine simply by the act of gravity. In the great majority of such cases that have come within my own knowledge the operation of gastro-enterostomy should not have been performed. The stomach which acts or fails to act, is generally a feeble, flabby atonic organ, capable of exercising little or no control on its contents. The fault here is due to the performance of the operation in an unsuitable case. The jejunum below the opening in such cases appears, by *x*-ray examination and on inspection, to be dilated as a result of the rapid filling; its distension may be the cause of great distress.

As I have said, pathological conditions which have escaped notice may be the cause of a continuing diarrhoea; of such cases are tuberculous disease of the ileum or caecum, or carcinoma of the ascending colon.

Diarrhoea may also occur within two or three weeks of the operation, and last a few days, or even a month or two, rarely more. This is especially noticeable in cases of malignant disease of the stomach causing obstruction, and is probably due to the unchecked escape into the intestine of putrid matter from the stomach, an intense intestinal irritation being the result.

In a few patients upon whom gastro-enterostomy has been performed with the usual striking success an occasional attack of diarrhoea may occur; the stools are liquid and green in colour, and irritating to the rectum. In other patients it may be noted that the stools are often clay-coloured, or almost colourless. In such cases the discomfort is trivial and temporary, and does not detract from the otherwise excellent result of the operation.

CONCLUSION.

The enumeration of all these untoward events in connexion with the operation of gastro-enterostomy appears very formidable. But, compared with the excellent results of the operation performed in appropriate conditions, and in a skilful manner, the disappointments are nowadays extremely few. Many of the errors to which allusion has been made are probably things of the past. For their avoidance the greatest care in preliminary investigation is necessary. The diagnosis of duodenal ulcer is rarely difficult; the diagnosis of gastric ulcer is never easy. A very large majority of patients supposed to be suffering from "gastric ulcer" are in truth suffering from other diseases. There is only one unequivocal method of diagnosis in cases of gastric ulcer, and that is by *x*-ray examination. The clinical symptoms are very treacherous.

But when the operation is begun no clinical diagnosis, however confidently made, can stand against the conditions revealed then to the hand and eye. If an ulcer is not seen and cannot be demonstrated, it does not exist, and therefore no operation designed for its cure or relief should be performed. A search must then be made elsewhere. And remembrance should always be given to the associated and interrelated actions of such organs as the liver, spleen, pancreas, and the alimentary canal.

REFERENCE.

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THE INFLUENCE OF DEFICIENCY OF ACCESSORY FOOD FACTORS ON THE INTESTINE.

BY

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(*Abstract.**)

THE pathological changes in the intestine which result from a dietary deficient in accessory food factors have been studied in 152 pigeons fed exclusively on autoclaved milled rice.[1] This dietary contains an excess of carbohydrates, is deficient in proteins and fats, and is almost wholly lacking in all classes of accessory food factors. The experiments were continued to a point at which death of the birds occurred, or was about to occur.

MACROSCOPICAL APPEARANCES.

The chief macroscopical features observed at autopsy in the intestine were atrophy and congestion, both of which might be extreme. All cases presented atrophy in greater or lesser degree, while a proportion, estimated at about 30 per cent., showed no congestion appreciable by the naked eye.

The upper portion of the intestine of healthy pigeons, especially that part embracing the pancreas, is thick and muscular. It is this portion which suffers most in consequence of the deficient dietary. The atrophy is of all grades of severity; it may be comparatively slight, or progress to a point at which the intestinal walls are so thin as to be transparent. As a rule the atrophy is more marked the longer the bird is under the influence of the defective diet.

The congestion is commonly confined to the upper part of the alimentary tract; less often it involves its whole extent. The branches of the mesenteric vessels surrounding the bowel may be greatly engorged, and extravasations of blood are occasionally to be seen under its serous coat. An attempt was made to correlate the degree of congestion with the degree of enlargement of the adrenal glands; no correlation could be established.

On splitting open the bowel, the upper three to six inches are often found to be distended with tapeworms, more rarely with round-worms—the latter usually dead, the former almost invariably alive. Round-worms have occasionally been found in the oesophagus.

On examining the surface of the bowel with the hand lens varying degrees of atrophy and erosion of the mucous membrane are encountered. These are not always uniformly distributed over the whole surface of the bowel; some areas show them in greater degree than others. Ecchymoses are common over the mucous surface; in the more severe cases pin-point haemorrhages into the bowel lumen are to be seen.

*The full text, with illustrations, is published in the *Indian Journal of Medical Research*, July, 1919.

HISTO-PATHOLOGY.*

Apart from some degree of atrophy of all coats of the bowel, which is universal in birds dying in consequence of this dietary, no marked histological changes, with the exception, it may be, of slight congestion, are found in approximately 30 per cent. of cases. In the remainder the histo-pathological appearances are very striking, although widely variable in degree in different birds. They comprised the following pathological changes:

1. *Congestion and Haemorrhage.*

In its mildest form this change consists in engorgement of the subperitoneal vessels, and in distension of the small vessels ramifying between the muscularis mucosae and the base of the crypts of Lieberkuhn, or the glandular structures corresponding to these in birds. The process of congestion is not usually limited to distension of vessels in these areas but may extend to those of the villi. The next stage in the congestive process is the occurrence of actual haemorrhages around the bases of the crypts. In some cases an almost continuous layer of haemorrhage may surround the bowel at this point. Such remnants of villi as remain are often seen to be much engorged or to contain effusions of blood; free corpuscles may be found in the lumen of the bowel or exuding from its congested and frayed mucous membrane.

A further, or simultaneous, stage in the process is the spread of these haemorrhagic areas from the submucous coat into the myenteron; these may involve only the circular layer of muscle fibres or penetrate to the longitudinal layer. It is not unusual to see larger tracts of the circular layer of muscle broken up by extensive haemorrhages into its substance. Such haemorrhages cause separation and rupture of the muscle fibres; the ruptured fibres may present ragged edges enclosing the collection of effused blood; the haemorrhages may be more diffuse, the corpuscles being scattered throughout the whole thickness of the myenteron and penetrating to the serous coat. Added to these appearances is the engorgement—often intense—of the vessels running under the serous coat and ramifying in the muscular layers. Oblique and longitudinal sections of these vessels may at first sight present the appearance of haemorrhagic effusions. Rupture of the vessel walls is, however, rare. Oedematous infiltration of the coats of the bowel has occasionally been encountered.

It thus appears that intense congestion of, and haemorrhages into, the coats of the upper bowel, sometimes leading to actual breaches in their continuity, are amongst the results of a dietary deficient in accessory food factors. It may be assumed that resolution of such haemorrhages would lead to the deposition of much fibrous tissue in the myenteron and serous coat.

2. *Atrophy of the Myenteron.*

The thickness of the circular layer of the muscular coat is not the same at every point of the bowel's circumference; it gradually merges from about 0.35 mm. to about 0.25 mm. In pigeons fed on the deficient diet the degree of atrophy of the circular muscular layer varies considerably. The muscular coat is usually thinnest in birds which survive longest, or in which infection of the bowel walls has occurred; it is atrophied, as a rule, to the extent of one half to one quarter its normal thickness in health, and its efficiency is thus proportionately reduced. Added to this are frequent haemorrhages, the rupture and separation of muscle fibres thereby, and, less commonly, segmentation and fragmentation of these fibres. The extent to which the motor function of the bowel may be impaired by the deficient dietary will be realized from these statements.

3. *Degenerative Changes in the Myenteric Plexus of Auerbach.*

Careful scrutiny is necessary in order to detect, in healthy birds, the ganglionic swellings of this plexus, as they lie between the circular and longitudinal layers of the myenteron. They are compact bodies of oval form varying considerably in size, the variations being, of course, dependent on their point of section. They fit snugly between the layers of muscle and give rise to little or no bulging in the contour of these layers.

In sections of the intestine from birds fed on the deficient diet these ganglia are much more obvious and catch the eye at once. Their readier recognition may be due in part to the fact that the atrophy and recession of the circular and longitudinal muscle fibres renders them more prominent. Their greater prominence is, however, often the result of swelling due probably to oedematous infiltration. In size they vary within wide limits dependent in some measure on their point of section. In general, they are double or treble the size of healthy ganglia.

The swollen ganglia have frequently been noted to cause bulgings of the longitudinal muscular layer towards the serous covering of the bowel or of the circular layer towards its lumen, or both. The cytoplasm of the ganglionic cells may appear shrunken, their nuclei more excentric than normal, and the nucleoli almost invariably fragmented, the last appearance being the most constant. Occasionally, whole cells or groups of cells appear to have disappeared, leaving in the ganglion lacunae empty of cellular structure.

There can, I think, be little doubt that the plexus myentericus is involved in a degenerative process. This being so, it may be concluded that the nervous control of the bowel is impaired in proportion to the degree of degenerative change.

4. *Atrophic and Inflammatory Changes in the Mucous Membrane.*

These consist in (*a*) atrophy and partial or complete disappearance of the villi; (*b*) frequent congestion of such villi as remain; (*c*) atrophy of the glandular cells of the crypts of Lieberkuhn, and separation of these from their basement membrane; (*d*) partial or complete disappearance of the lymphoid cells lying between and around the crypts; (*e*) thinning, or actual disappearance in places, of the muscularis mucosae; (*f*) a relatively greater proportion of reticular cells, and the scattered deposition of fibroblasts; (*g*) an increased proportion of leucocytes in the atrophic mucous membrane; and, more rarely, (*h*) bacterial invasion with intense inflammatory and necrotic changes in the mucous membrane and underlying coats of the bowel.

These appearances are, as a rule, most marked in birds which have survived the dietary for the longest time or in which infections of the bowel wall, are found at autopsy. They are rarely present in the same degree at every area of the bowel's circumference. Sections of even the most severely affected intestines may show some areas in which these changes are much less marked than in others.

5. *Atrophy of Lymphoid Structures.*

In the healthy pigeon the lymphoid cells fill in the spaces between the crypts, and present a continuous layer of varying thickness between the bowel lumen and the muscularis mucosae. In diseased birds this protective layer is atrophied in greater or lesser degree. In some areas it was completely wanting, and the muscularis mucosae also had frequently disappeared.

6. *Fibrosis.*

The evidences of fibrosis are scanty in so far as the mucous membrane itself is concerned. Areas, however, are encountered in which there is a deposition of scattered fibroblasts. Some long-standing cases present areas of fibrotic infiltration in the muscular coats; but this being a reparative process, it is likely to be encountered only rarely in birds not permitted to recover. It may be expected that where such recovery is brought about the resolution of the haemorrhagic effusions will give rise to extensive fibrotic deposits in the muscular and serous coats of the intestine.

7. *Changes favouring Infection from the Diseased Bowel.*

Systemic infection is rendered more easy in the presence of these pathological processes owing (1) to impaired production of digestive juices; (2) to continued congestion of the mucous membrane and consequent malnutrition of its secretory cells; (3) to loss of the protective layer of lymphoid cells; (4) to increased leucocytic invasion of the mucous membrane and to increased leucocytic traffic in micro-organisms between the bowel mucous membrane and the blood stream; (5) to the greater facilities which

*This account of the histo-pathology is based on an examination of serial sections of the intestine in twenty-four pigeons fed to the point of death on autoclaved rice.

the debilitated mucous membrane provides for the growth of bacteria on its surface and in its substance; (6) to the imperfect digestion of food in the upper alimentary tract, which affords a favourable medium for the growth of micro-organisms; and, although more rarely, (7) to actual breaches of continuity in the walls of the bowel itself. Occasional specimens have shown a direct continuity of blood corpuscles from the eroded villus to the blood vessels running external to the serous coat.

Cases were encountered with comparative frequency in which the effects of intense bacterial invasion of the bowel walls have been added to the atrophic and congestive processes. In such cases bacteria of various types were to be found in large numbers throughout the necrotic mucous membrane and lying also in the submucous and muscular coats. By special staining methods bacteria (chiefly cocci) have been detected in the vessels of the submucosa, and bacteria-laden leucocytes are common objects in the microscopic field. In these circumstances bacterial organisms may pass directly into the blood stream from the infected bowel walls. In four such cases I cultivated from the heart's blood at autopsy, by aërobic methods, a small coccus in two, a coliform organism in a third, and bipolar organism in a fourth. Infection of the blood from the bowel is therefore no uncommon consequence of "vitaminic" deficiency.

In cases of intense infection of the bowel walls the atrophic congestion and necrotic processes may be so pronounced as to render the recovery of the mucous membrane impossible. One is occasionally surprised to find that, while in one case the administration of "vitaminic" extracts will cure "polyneuritis" with surprising rapidity, another, to all appearances identical with it, will succumb. Amongst the reasons for this are the varying degrees of pathological change and of bacterial invasion of the bowel walls as well as systemic infection therefrom. It is evident that the ingestion of specific pathogenic organisms (such as *B. dysentericus*, *B. typhosus*, *Entamoeba histolytica*, etc.) in the presence of "vitaminic" deficiency is likely to be followed by their implantation on the debilitated bowel mucous membrane.

In connexion with these lesions in the upper alimentary tract of pigeons fed exclusively on autoclaved milled rice it is to be remembered that Hamilton Wright [2] was so impressed with the constancy of pathological changes in this situation in human beri-beri that he attributed this malady to a specific gastro-duodenitis. As is now well known, the pathological changes he described are not the cause of beri-beri; they are, however, important evidences of deficiency of certain accessory food factors in the diet. The fact that Wright found a bacillus of constant morphological characters in this situation is important. Although the organism is not the specific cause of beri-beri, its presence is an illustration of the fact that the wall of the upper intestine may become infected in the human subject in consequence of such a dietary.

During the course of my studies of the pathogenesis of deficiency disease [3] I have had occasion to feed a number of pigeons (forty-two) on a dietary consisting of autoclaved milled rice, fresh butter, and onions—that is to say, on a dietary containing an excess of carbohydrates and deficient in accessory food factors, chiefly of the water-soluble "B" class. Naked-eye evidences of congestion and other pathological processes are much less frequently encountered in the intestine in birds so fed. The atrophy of the bowel, although often considerable, is usually less marked than in cases dying in consequence of complete "vitaminic" starvation. Histologically the same degree of congestion is not encountered, actual haemorrhages are rare, and the degree of atrophy of the myenteron and of the elements of the mucous membrane, although occasionally considerable, is often comparatively slight. A dietary of autoclaved rice which is enriched with butter and onions thus provides some at least of those factors on which the functional perfection of the alimentary tract is dependent.

Commentary.

Interpreted in terms of bowel function, the derangements to which such pathological changes as have here been described may ultimately lead can be grouped as follows:

1. Impairment of the neuro-muscular control of the bowel; impaired transport of the intestinal contents along the alimentary canal.
2. Impairment of assimilative power.
3. Impairment of secretory function.
4. Impaired protective resources leading to infection of the mucous membrane of the bowel by pathogenic saprophytes, or ingested bacteria, and to systemic infection therefrom.

Unwilling as I am to apply too directly to the human subject the experimental results of intensive "vitaminic" starvation observed in birds, we may, I think, regard the changes I have described as applicable in some degree to man.

It is my experience that, while complete deprivation of accessory food factors will cause the relatively rapid appearance of so-called "polyneuritis" * in birds, subminimal provision of these substances, protracted over prolonged periods of time, will, especially in young and growing birds, eventually lead to a like morbid state. It is, I think, with sustained subminimal supply of accessory food factors that the physician is mainly concerned in practice. Complete "vitaminic" deprivation is, as I have pointed out in another place,[1] relatively rare; incomplete "vitaminic" deprivation, or subminimal supply of accessory food factors, is relatively frequent. If, in the light of the histo-pathological findings here recorded, we consider the case of children fed, it may be from birth, on foods deficient in these essential substances, and the frequency with which in later life their dietary continues to be ill-balanced and defective, we are, I venture to think, in a position to realize the ultimate consequences of such a dietary and to anticipate the sequence of events leading up to grave derangements of bowel function. Food deficiency also prepares the soil for bacterial growth, and the resultant morbid states will vary with the nature of the organisms which may become implanted upon it. This knowledge, if it does not enable us to account fully for such gastro-intestinal disorders as mucous disease, coeliac disease, and chronic intestinal stasis, will at least help us to a better understanding of their genesis.

Mucous Disease.

I have referred to the fact that pigeons fed on an exclusive dietary of autoclaved rice frequently suffer from diarrhoea,[1] and have pointed out that this symptom of "vitaminic" deficiency can in a proportion of cases be made to disappear, often with surprising rapidity, by the administration of the alcoholic extracts of the yolks of eggs. Others have drawn attention to the almost constant occurrence of diarrhoea or of colitis as precursors or concomitants of the condition known as "war oedema," a malady proved to be due to food deficiency.[4] Clinical evidence of bowel derangements due to this cause are, therefore, not lacking. If, then, we attempt, from the results of our histo-pathological observations, to provide an explanation of the origin of mucous disease, we may, I think, surmise that continued subminimal "vitaminic" supply will lead to that state of chronic gastro-intestinal catarrh which characterizes this disorder.

Mucous disease is very common amongst European children in India who are fed largely on sterilized milk (milk which, in my own experience, is often poor in "vitaminic" content), artificial foods, white bread, polished rice, poor butter, over-cooked vegetables and excessive quantities of sugar. Therapeutic experience of this malady shows how readily it yields to limitation of carbohydrates and to a rationally-balanced dietary of good "vitaminic" quality. The mucous stools, the diarrhoea, the peevishness, the unhealthy appetite rapidly disappear on such a regimen, as also do the "night terrors" from which the subjects of mucous disease so frequently suffer.

I do not wish to dogmatize with regard to the genesis of this malady. I would but draw attention to the fact that an ill-balanced diet, deficient in accessory food factors, is capable of giving rise in pigeons to a state of chronic congestion of the intestinal mucosa, often accompanied with hypertrophy of the adrenal glands; the relief afforded to children suffering from mucous disease by the correction

* The term "polyneuritis," as applied to the morbid state resulting in pigeons from an exclusive dietary of autoclaved milled rice, is a misnomer. It suggests that the nervous tissues are exclusively or mainly involved in the pathological process, whereas in reality no organ or tissue escapes the consequences of "vitaminic" deficiency; some, indeed, such as the reproductive organs, the spleen, the thymus, and the digestive organs, are more gravely affected than is the nervous system. (See BRITISH MEDICAL JOURNAL, February 15th, 1919.)

of their ill-balanced dietaries may find an explanation in this fact.

Coeliac Disease.

One cannot read the illuminating account of coeliac disease given by Dr. G. F. Still[5] in his recent Lumleian lectures without considering the possibility that it also may owe its origin to similar dietetic deficiencies. Its absence in breast-fed children, its onset between the age of nine months and two years, the diarrhoea which so frequently precedes it, the cessation of growth, the ill-formed, pale "oatmeal" stools, the frequent association of scorbutic symptoms, the abdominal distension, the afebrile nature of the malady, the diminished size of the liver, the blood changes, the occurrence of oedema, the thin bones, the muscular feebleness—all these find their counterpart in pigeons fed on an exclusive dietary of autoclaved milled rice.[1] The pathological findings recorded in this paper indicate with what readiness pathogenic organisms may invade the atrophying intestinal mucous membrane and lead to inflammatory states and fibrotic thickenings therein. The enlargement of the adrenals, which is so constant a result of "vitaminic" starvation, and so frequently associated with oedema in birds, may not be wanting in coeliac disease; I can find no records with regard to the adrenals in this malady.

I venture to suggest that those who have the opportunity should examine cases of coeliac disease, and more especially all available *post-mortem* material, from the point of view of food deficiency. Whether or not this malady is found to be due primarily to such deficiency, it would appear probable that a number of its characteristics are secondary to the imperfect assimilation of these essential ingredients of the food.

If, now, we bear in mind the possibility of subminimal "vitaminic" supply protracted over prolonged periods from childhood onwards, we have, I think, a new viewpoint from which to consider the genesis of that common disorder.

Chronic Intestinal Stasis.

In the recent edition of Sir Arbuthnot Lane's work on this subject[6] Professor Arthur Keith draws attention to two anatomical factors which he regards as of primary importance in the causation of chronic intestinal stasis: (1) Defective action on the part of the abdominal musculature, and (2) a lesion of the neuro-muscular system of the intestine.

The histo-pathological findings recorded in this paper indicate one means by which both the abdominal musculature and the neuro-muscular system of the intestine may be simultaneously impaired in functional capacity. Deficiency of certain accessory food factors leads to atrophy of all muscular tissue as well as to disordered function or actual degeneration of motor nerve cells throughout the entire body. The abdominal musculature and the nerve elements controlling it must of necessity suffer along with other muscular and nervous tissues. It may be concluded, then, that defective action of the abdominal musculature will ultimately result in consequence of deficiency of accessory food factors.

In addition to this functional defect of the abdominal wall, we find also in pigeons starved of "vitamines" unquestionable evidence in the wall of the intestine itself of neuro-muscular lesions of great significance. Whether or not we are justified in applying these findings to the genesis of stasis in the human subject, we may at least regard with suspicion human food which does not conform to standard in respect to perfect "vitaminic" balance.

There can be no doubt that the dietaries of children amongst the poorer, and often amongst the richer, classes are frequently deficient in these important ingredients. Subsistence on such ill-balanced dietaries from childhood onwards may be regarded as calculated to lead to defect of the abdominal musculature, to neuro-muscular lesions of the intestine, and to changes in the glandular elements of its mucous membrane. Indeed, the pathological changes in the large bowel in stasis, as described by Professor Keith, are strikingly similar to those I have enumerated as occurring in pigeons fed on a "vitamine"-free food. He describes the morbid changes as affecting two systems—the glandular and the neuro-muscular:

> The chief change in the muscular coats of the diseased great bowels removed from cases of enterostasis is a fibrosis—one which mainly affects the tissue between the outer and inner coats of the bowel, the intermediate stratum which insheaths the myenteric plexus. Degeneration in areas of the musculature, particularly of the outer longitudinal coat, also occurs. In every case there are inflammatory changes varying in degree. There are many marked changes in the lining glandular epithelium and in the submucous coat. One notes also that there is engorgement of the subperitoneal vessels and that the subperitoneal tissue is much thicker and denser than is normal.

Having regard to the fact that the pathological processes I have described are acute in nature, and induced by intensive "vitaminic" deprivation, whereas those recorded by Professor Keith are chronic, the similarity between them suggests that subminimal "vitaminic" supply protracted from an early age has a fundamental influence in the origin of the lesions found in stasis. However this may be, we must regard with suspicion an influence which is capable of providing at once the anatomical conditions necessary for the development of stasis and the facilities for systemic infections which are known to result from it.

Conclusions.

1. Deprivation of accessory food factors leads in pigeons to congestive and atrophic changes in all coats of the bowel, to lesions of its neuro-muscular mechanism, to impairment of digestive and assimilative processes, and to failure of its protective resources against infection.

2. Certain gastro-intestinal disorders in the human subject—of which three examples are referred to—may owe their origin to subminimal supply of accessory food factors protracted over long periods of time.

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AN INVESTIGATION OF THE END RESULT IN ONE HUNDRED AND TWENTY-FOUR CASES OF BLOOD TRANSFUSION.

BY

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THE following is a record of the results obtained in a series of blood transfusions carried out in a base hospital in France between November, 1916, and October, 1918; with a comparative table of the results in cases of as nearly as possible identical clinical nature, treated before blood transfusion was available.

Method.

Indirect transfusion by Vincent's paraffin coated tube was employed; thus unaltered blood was used. The use of citrated blood is open to the objection that citrate is a depressor of blood pressure.[1] Experience has shown this objection to be mainly theoretical, and as transfusion of citrated blood is easily performed and carries least risk to donor or recipient, I believe it to be the best method. It was, however, not available in the period dealt with.

Compatibility.

This was established at first by direct comparison of the bloods under the microscope, later by obtaining Group IV donors by the convenient macroscopic method introduced by Lee.[2]

Indications.

The main indications for blood transfusion in a base hospital are (1) severe secondary haemorrhage, (2) preliminary to high amputation of the thigh or arm, (3) certain cases of pyaemia. The primary indication for transfusion, surgical shock, is much less frequent at the base than at a clearing station, but I cannot subscribe to the view expressed that secondary haemorrhage is rarely accompanied by shock.[3] There is a class of cases in which typical symptoms of shock are present, and the amount of blood lost is so small as to preclude the possibility of the clinical condition of the patient being due to anaemic

collapse. Not infrequently these cases exhibit premonitory symptoms, consisting of extreme restlessness, blanching, and increase of pulse rate, which are sufficiently definite to lead one to make sure that a tourniquet is readily available. A lesion of a main arterial trunk is almost invariably present in such cases. Experimentally, it was found that manipulation of a large vessel in a wound caused considerable variation in the general blood pressure, even if the vessel were uninjured. These cases lend support to the view that disturbance of the nervous mechanism of the vascular system may be the initial pathological factor in the production of surgical shock.

Amount.

The amount of blood employed was usually 600 c.cm., but amounts of 900 to 1,200 c.cm. have been injected as the condition of the patient demanded. The donor's blood pressure usually fell about 10 mm. Hg, but recovered to normal within an hour.

Accidents.

(*a*) *Incompatibility* has been met with on three occasions. In two of these transfusion was abandoned, no ill effects persisting; they occurred early in the series, and were probably due to faulty comparison of the bloods. (These cases are not included in the series.) The third case occurred in a patient suffering from pyaemia, and merits a detailed note.

The patient was being transfused for the third time, the same donor being employed as in the second transfusion, performed without mishap three weeks previously. The recipient's condition was normal until about 200 c.cm. of blood had been injected, when acute collapse, with symptoms of haemolysis, occurred, and death took place abruptly. Autopsy revealed no evidence of embolus in lungs or cerebrum, and as a specimen of blood taken from recipient's vein was found to be haemolysed, I have no doubt that death was due to incompatibility.

In addition to emphasising the necessity for ascertaining the symbiosis of the two bloods before every transfusion, the case seems to indicate that incompatibility may develop as a result of multiple transfusion; unfortunately it was impossible to determine whether the antagonism in this case was peculiar to the blood of the individual donor, or a true incompatibility to an entire blood group. Incompatibility usually declares itself after 10 c.cm. of blood have been injected; in this case injection had proceeded for a considerable time before any symptoms appeared. Accidents of a similar nature have been reported by other observers; a suggested explanation given by Bond is that "a definite alteration has been found to occur in the direction of increased haem-agglutinin content of the blood in the interval between two transfusions," and that this was responsible for the unfortunate result.[4]

(*b*) *Injury to Donor.*—This occurred once, probably the result of the transfusion tube having been reintroduced to the donor's vein after being employed on the recipient. Infection spread distally in the radial vein, which was removed through an incision at the wrist in the manner of Babcock's operation for varicose veins; complete recovery followed. A transfusion tube should not be filled a second time, and to avoid this it is convenient to employ a tube of 600 c.cm. capacity. In closing the donor's wound I make a point of removing half an inch of the vein opened in case it may have suffered damage during the proceedings.

Conclusions.

The cases are tabulated according to the clinical condition and operation performed. The figures, it should be remembered, represent a considerable proportion of the desperate cases met with in base hospital work, and afford no guide to the general death rate in the various clinical conditions. Transfusion for pyaemia was to some extent experimental, and was in fact an attempt to do something further than merely drain secondary abscesses. Patients who had recovered from some slight septic lesion were employed as donors. I think the number of recoveries in these very severe cases justifies an extension of the method as a therapeutic measure. The results in Class II indicate the usefulness of transfusion as a prophylactic against shock; it seems reasonable to hold that it should come into general use in civil practice as a preliminary to any severe operation.

Clinical Condition and Operation Performed.	Cases Transfused.			Cases not Transfused.		
	No.	Recovery.	Death.	No.	Recovery.	Death.
CLASS I.						
(*a*) Secondary haemorrhage; ligation of main artery	52	35	17=32.7%	52	28	24=46.1%
(*b*) Secondary haemorrhage; amputation of limb	14	10	4=28.5%	14	7	7=50.0%
CLASS II.						
Sepsis or gangrene; amputation of limb	39	35	4=10.2%	29	20	9=31.0%
CLASS III.						
Pyaemia	19	12	7=36.8%	—	—	—
Totals	124	92	32=25.8%	95	55	40=42.2%

A number of sphygmomanometric records were taken of the effects on blood pressure of various substances used in intravenous injections, and will be made the subject of a future communication.

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[1] Professor Sir E. Sharpey Schafer: BRITISH MEDICAL JOURNAL, December 8th, 1917. [2] Major Roger Lee: Ibid., November 27th, 1917. [3] Captain O. Robertson: Memorandum on Blood Transfusion, Medical Research Committee, April 4th, 1918. [4] Colonel C. J. Bond: BRITISH MEDICAL JOURNAL, March 22nd, 1918.

MASTOIDITIS.

BY

ADAIR DIGHTON, F.R.C.S.,

HONORARY SURGEON, EYE AND EAR INFIRMARY, LIVERPOOL; HONORARY AURAL SURGEON, BIRKENHEAD CHILDREN'S INFIRMARY.

FOR the last ten years I have been in daily contact with cases of suppurative otitis media, or its complications, in the out-patient department and operating theatres, and some opinions founded on this experience may be of interest.

The term "suppurative otitis media" is a misnomer, as in every case the disease starts in the mastoid antrum, and the suppurative otitis media is only an outward and visible sign or symptom of this invisible disease. I had swabs taken from the bottom of the mastoid antrum in fifty consecutive cases of operation for suppurative otitis media, and in every one pathogenic micro-organisms were found. The cases were not selected, but were taken as they came, and ranged, according to the duration of the discharge, from one day to seventeen years; and, according to the age of the patient, from one year to sixty-nine. It is therefore not a matter of wonder that treatment by drops, syringing, powders, etc., is ineffectual.

During 1915 I had further proof in a school clinic at which the patients could be seen and treated daily. The patients were divided into sets. One set was treated with drops, another set by hydrogen peroxide and syringing, another by massive lavage, etc.; but in no case was there any sign of improvement of any sort, but, on the contrary, the few cases which came to operation later on at the hospitals showed more extensive bone destruction than might have been expected from the duration of the disease. This experience was repeated during the years 1917–18, when, as officer in charge of the aural centre at Blackpool, 4,148 cases passed through my hands; 90 per cent. were cases of suppurative otitis media. They were treated daily by all known methods, with no good result of any kind, and remained in their original category of B 3. A great waste of men who, by means of operation (no beds were available), might, in the space of three months, have been raised to category A 1.

As the mastoid antrum is the real cause of suppurative otitis media, the only feasible treatment is by operation—and early operation. During my period as officer in charge of the aural centre I took particular note of all operated cases, and found that among 53 cases only 9 could justifiably be called healed. Of these 9, 5 underwent a radical operation, and 4 a modified mastoid, or Heath, operation.

In the former cases the best hearing was 7/17 watch, whilst in the latter the hearing was practically normal (15/17). These cases had not been operated upon by any one surgeon, but were drawn from all over England. Of the 44 unhealed cases, 33 had widely patent Eustachian tubes. This is interesting, as one very seldom, if ever, gets trouble from the tubes after Heath's operation; and the reason is, I think, because in it the drum heals up and so prevents what may be called a draught from the throat via the tubes through the ear. This draught, owing to the loss of the drum, and the inefficient closure of the tympanic orifice of the Eustachian tube in the radical operation, keeps on reinfecting the ear with micro-organisms from the throat. Ten of the 53 cases had had more than one operation performed, and another six had well marked facial paralysis.

In all except 5 cases the radical operation had been performed so that the statistics read: 48 operations, 5 healed, 10 operated upon more than once, 6 cases of facial paralysis, and 43 of the 48 in the same condition, possibly worse than they were prior to operation. The number of Heath's operation was small, in all probability because they were in a higher category than B 3, and so would not be found in a low category area such as Blackpool was.

From these statistics even the most ardent supporters of the radical operation can hardly claim satisfaction, and it cannot be wondered at that from them, and my other experience, I am of opinion that, save in very exceptional cases, it is hardly a justifiable procedure. These "very exceptional cases" are hard to define, as I have seen advanced cases of cholesteatoma recover after Heath's operation, and there is no necessity for a radical operation, if the internal jugular vein is ligated as a preliminary step, in cases of lateral sinus thrombosis. I think I should confine the indications for the radical operation to those cases in which there is present a non-functioning labyrinth, in which the operation has to be followed or continued by a complete labyrinthectomy.

The actual technique of the Heath operation has so often been described that it need not be repeated, but one or two variations I have found useful may be mentioned. As a preparatory dressing I find that iodine 2 per cent. in carbon tetrachloride is by far the nicest and does not blister or irritate the skin. The flap, which I described in the *Annals of Otology* (June, 1916), is the most useful, and, after one has used it for a few operations, can be so fashioned in nearly every case that the stitch which holds it closes the post-auricular wound and obviates the use of skin stitches. One skin stitch at most is all I ever use.

As after-dressing I prefer ribbon gauze soaked in freshly prepared eusol for a week, until the flap stitch is removed, and then instillations of rectified spirit with no syringing of any kind, as the drier the ear is kept the better.

After-complications are rare. I have never had a case of facial paralysis, but have had one of very large keloid in the post-auricular scar (possibly due to the use of scarlet-red ointment), which disappeared under treatment by radium. There was one case of metastatic ophthalmia; it occurred in a child, aged 7, who was admitted to my wards in 1912 with semi-acute mastoiditis on the right side. I operated by the Heath method, and for a day or two all seemed to go well, when a septic temperature with no localizing symptoms began. I opened the post-auricular wound, and, after washing it out, packed it from behind. The temperature dropped, and there seemed nothing to hinder her convalescence until the fourth day after the second operation, when she developed hypopyon in the left eye. This was accompanied by no pain, redness, or discomfort, and there was no wound or abrasion of the cornea. The vitreous gradually became infected, and she is now (1919) waiting to be taken into hospital to have the shrunken remnant of the left eye removed. Her ear is perfectly healed, the membrana tympani is normal, and the hearing 17/17 watch. The mastoid infection was streptococcal in origin. A point of interest in this case was the fact that the metastatic ophthalmia occurred on the opposite side to the operated ear, and hence the side on which the child lay in bed.

LAVAL UNIVERSITY, Montreal, has been separated from Laval University, Quebec City, and will henceforth be known as the University of Montreal.

TWO CASES OF ACUTE PERFORATED GASTRIC ULCER: OPERATION: RECOVERY.

BY

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THESE two cases are reported in order to illustrate once more the necessity of bringing such cases under treatment at the earliest possible moment if success is to be hoped for.

CASE I.

Pte. C. E., R.A.F., aged 49, was sent to hospital in an ambulance about 7 p.m. on December 20th, 1918.

He stated that before joining the army he had been an upholsterer. He had suffered from indigestion for years—that is, he had pain and tenderness in the epigastrium with occasional attacks of vomiting, and was always subject to "wind." He had been able to keep these symptoms more or less in check by dieting himself, until after he enlisted, when he had to have the food that was supplied to the troops. For two days before admission he had had rather more pain and had been sick once. On the day of admission he had had tea, consisting of tea and bread and jam, about 5 p.m.; shortly afterwards he was seized with sudden acute pain in the epigastrium and was sick.

He was a tall spare man, with very few teeth, and those he had were in a deplorable condition. The tongue was clean. He stated that his bowels had acted in the morning. Pulse 80; temperature 97.8°. He was very pale and wore a scared look. The pain was less severe and more generally distributed over the abdomen than when first seized. The epigastric region was distended. The rest of the abdomen was somewhat retracted but rigid. Tenderness was most marked a little to the right of the middle line midway between umbilicus and xiphoid cartilage. This area was tympanitic and there was complete absence of liver dullness. The patient was seen, at my request, by Major Brasher, R.A.M.C.(T.), who confirmed the diagnosis of perforated gastric ulcer.

He was prepared at once for operation and taken to the theatre, Major Brasher kindly administering the anaesthetic for me. An incision was made from just to the right of the middle line between the xiphoid cartilage and the umbilicus. When the parts were retracted, the liver held up, and the stomach pulled gently downwards, the perforation was found to be on the anterior surface of the stomach, close to the pyloric end and rather nearer the lesser curvature. Bubbles of gas were escaping, as well as fluid that looked like weak tea. The perforation was of fair size; there was very little induration around it. It was closed with fine silk, invaginated, and sewn over in the usual way. Not much fluid was seen in the abdomen, but what was there was mopped away and two large drainage tubes with wicks inserted; one drained the right kidney region, and the other was placed in the pelvic cavity through a separate incision in the middle line above the pubis. There was no recent peritonitis to be seen anywhere, nor were there any adhesions to be found pointing to previous peritonitis. He made a completely uninterrupted recovery. He was kept on sips of water for forty-eight hours, and given salines by the rectum. He had been on chicken diet for three weeks before leaving hospital, and was discharged from hospital on February 17th, 1919, stating that he had not felt so well for a very long time.

CASE II.

Pte. M. S., Royal Irish Rifles, aged 38, was sent into hospital at about 8.30 p.m. on December 31st, 1918, in an ambulance. He was examined by Captain E. J. Coombe, R.A.M.C.(S.R.), who diagnosed perforated gastric ulcer. He was sent into one of my wards and seen by Major Brasher, R.A.M.C.(T.), and myself, and the diagnosis confirmed.

The patient stated that he had been subject to indigestion for a very considerable time, and that it had been worse during the past week. He had been in his usual state up to about 6 p.m. on the day of admission, when he was seized with violent pain in the epigastrium and was sick. On arrival he was somewhat collapsed, very pale and cold, with subnormal temperature and pulse of 88. He had very few sound teeth, and was generally of poor physique. The bowels had acted in the morning. He stated that the pain was easier and had became more general over the abdomen. The lower part of the abdomen was flat, but not retracted. The upper part was full, and the liver dullness quite absent. The epigastrium was tender, but no one spot could be found.

He was prepared for immediate operation, and taken to the theatre, where Major Brasher gave the anaesthetic. An incision was made to the right of the middle line, and as soon as the peritoneum was opened gas and greenish stomach fluid escaped. The perforation in this case was much larger, and was situated at the pyloric end of the stomach on its anterior surface, rather closer to the greater curvature. The induration around was distinct. The perforation was closed in the usual way, and a tag of omentum stitched over the site of the perforation. As much of the fluid as could be found was mopped away, and two drainage tubes with gauze wicks were inserted—one through the operation wound into the right kidney region, and the other through a separate incision below the umbilicus

to drain the pelvis. No adhesions were found of any moment, and there was no sign of commencing peritonitis.

This patient progressed very satisfactorily for about ten days, when he had an attack of influenza followed by right-sided pneumonia. He weathered this storm under Major Brasher's care. He left the hospital on February 27th, 1919, somewhat pulled down in general health, but with no sign of any abdominal trouble.

In neither of these cases was irrigation of the abdomen performed after the closure of the perforation; in early cases such as these I am of opinion that irrigation may possibly do more harm than good.

The happy result in both these cases I put down to the patients getting under surgical treatment so early, and to the excellent nursing they received from first to last.

My best thanks are due to the nurses for their skill and kindness, and to Lieut.-Colonel Henchley, D.S.O., R.A.M.C.(T.), Commanding Military Hospital, Fargo, for his permission for me to publish these notes.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

JAUNDICE IN INFLUENZA.

In accounts of the recent influenza epidemics jaundice has been mentioned as a serious, and often terminal, symptom. Lieut.-Colonel E. C. Cooper Cole, in a recent number of the BRITISH MEDICAL JOURNAL, states that "epigastric pain, with some rigidity, was a frequent complaint, and jaundice of considerable degree was usually of bad omen, fairly marked hepatic degeneration and occasionally perihepatitis being found *post mortem*." Dr. W. H. Willcox, in his Lettsomian Lectures, mentions that it has been noted by others in a less severe form.

In my experience jaundice is a fairly common complication, and has not been of serious import; it has sometimes occurred as a relapse after the patient has recovered from the initial attack of influenza. Many patients complain of nausea, epigastric and hepatic heaviness and pain, and if the urine is examined bile pigments are found.

The following sequence occurred in the epidemic at the end of last year in three consecutive cases of mine, all of which made good recoveries:

Case 1.—Influenza, temperature 104°, congestion of bases of both lungs; constipation, nausea, epigastric pain; bile pigments in urine.

Case 2.—Influenza, temperature 102°, nausea and vomiting; epigastric pain; icterus, bile pigments in urine.

Case 3.—Influenza, temperature 104.2°; right pleurisy; nausea and epigastric pain; icterus, bile pigments in urine.

Chester. BARBARA G. R. CRAWFORD.

A CASE OF ASPIRIN IDIOSYNCRASY.

C. H., male, aged 32, married, a patient in Brompton Hospital under the care of Dr. Batty Shaw, was given 10 grains of aspirin, in tablet form, at 2.45 p.m. on June 19th, for some minor neuralgic trouble. At 3.45 I was called and found the patient cyanosed and gasping for breath; although he made efforts to speak he was unable to do so. His hands and feet were cold and clammy. His pulse was good; the rate slightly increased. This condition lasted about twenty minutes.

About 5 p.m. his face, forehead and neck began to swell, and this oedema was so marked at 5.30 that the patient was unable to open his eyes. About this time an erythematous rash was visible over the face and upper extremities. His breathing became less laboured, and by 6 p.m. was practically normal. The rash and oedema gradually subsided, but traces of them were visible at the end of the third day. At 6 p.m. on June 19th he passed about a pint of urine. It was clear; specific gravity 1015. There was a trace of albumin, but no sugar.

On questioning the patient closely I found that three-quarters of an hour after the dose of aspirin he experienced a sensation of choking and intense irritation of the skin of the feet. He also informed me that two years ago a somewhat similar series of symptoms developed after the taking of a small dose of aspirin. Obviously the case is not one showing toxic effects of the aspirin, for the same aspirin is in common use in the wards and has never during my service in the hospital for twelve months produced such effects in any other patient. Further, this particular patient has only twice in his life taken "aspirin," and on each occasion he has had the above severe symptoms.

I am indebted to Dr. Batty Shaw for permission to publish the notes of this case.

W. A. E. KARUNARATNE, M.B., B.S.

Brompton Hospital.

Reports of Societies.

NASAL HYGIENE.

AT a meeting of the London Association of the Medical Women's Federation, held on July 1st at 11, Chandos Street, the President, Lady BARRETT, in the chair, Dr. OCTAVIA LEWIN read a paper on nasal hygiene and national health, and showed several cases of children successfully treated for nasal obstruction and deafness without operation. She also showed a case of stenosis of the posterior nares following an operation for adenoids in a child who was a diphtheria carrier. Dr. Lewin emphasized the fact that many operations could be avoided by proper attention to the nose and breathing. Miss LOWRY, in a paper on the nose in relation to general diseases, referred to the importance of nasal obstruction and sinus suppuration in respiratory, digestive, and nervous diseases, and gave instances of mistakes in diagnosis and treatment of such cases. She mentioned some of the superstitions held by patients as to the connexion between gynaecological conditions and the nose and throat, and said that it was to be regretted that similar statements were still made in textbooks on gynaecology, and apparently copied into papers and books on the nose and throat.

Reviews.

BELGIAN SURGERY.

THE first fasciculus of the second volume of the reports of the *Ambulance de "l'Océan,"*[1] under the general editorship of Dr. DEPAGE, fully maintains the high level set in the first issue. The matter is, of course, largely "war" material, and for much of it there is happily little immediate application, but it serves to show how great a measure of unanimity of opinion and practice amongst Entente medical men was attained before the armistice. The editor describes the operation of excision of wounds with moderation and common sense; he discusses the proper limits of primary and delayed suture. With Dr. Delrez he describes the treatment of wounds of the foot, giving incidentally an account of a method of flap transplantation *en cascade*, that is to say, gliding one end to a new position, and when that is well "alive," detaching the original pedicle, and reimplanting still lower, and so on.

The authors do not seem to experience the same trouble as other surgeons with ineradicable sepsis of the tarsus, possibly because they excise large portions with reconstruction of "dumped" feet, which, however, do not—as far as may be judged from pictures—promise very well for the artificial limb makers' purposes. Delrez himself deals with joints, and speaks in high terms of the early movement of infected joints, a novel method which obtained equally good results in the hands of some of our own surgeons. Dr. Neuman writes of wounds of the abdomen, with statistical results comparable to those of the British and French armies. Dr. Janssen describes his method of cranioplasty; he employs tibial grafts, periosteum to dura. His methods have their greatest employment in the relief of headache, vertigo, hyperemotivity, epilepsy, and psychic disturbances, with cosmetic improvement. Dr. Harven makes an interesting contribution to the histology, physiological and pathological, of wound tissues. Dr. Govaerts describes a new method of ascertaining the bacterial state of a whole wound surface pre-

[1] *Ambulance de "l'Océan," la Panne.* Published under the direction of Dr. A. Depage, Tome II, Fasc. I, July, 1918. Paris: Masson et Cie.; London: H. K. Lewis. 1918. (Roy. 8vo, pp. 376; illustrated. Single copies, 14s. net. Annual subscription, 25s. post free.)

paratory to secondary suture. Drs. Delrez and Govaerts give the results of experiments on the elimination of organisms from the blood stream, indicating that the process is not always or chiefly an agglutination but rather a massing of organisms and platelets precipitated in the capillaries. Dr. Zunz, besides giving an account of a case of pleural effusion containing cholesterine, makes a contribution to the study of the antiproteolytic properties of exudates and their alkali-reserve content. The last hundred pages, from the pen of Professor Levaditi, are devoted to a study of the streptococcus in war wounds, characterized by the thoroughness and care usual in the publications of the Pasteur Institute. There remains to be mentioned an article by Professor Dustin on fasciculation of nerves, of which more detailed mention will be made elsewhere.

RADIOGRAPHY OF THE CHEST.

DR. R. LINDSAY REA, in a volume entitled *Chest Radiography at a Casualty Clearing Station*,[2] has given an account of his experiences of *x*-ray work in France. His object, as stated in the preface, is to help *x*-ray officers, working under similar conditions, to overcome the difficulties likely to arise while in the field and away from the facilities available in a base or home hospital. In this he has succeeded, as his book is full of sound advice and he displays a wide knowledge of his subject. The first chapter deals with the arrangement of the *x*-ray department of a casualty clearing station; he rightly points out that the *x*-ray room must be intimately associated with, if not actually a part of, the operating theatre, which was the almost universal practice in France. Several plans for *x*-ray huts are given, including Lieut.-Colonel F. W. Higgs's portable sail-cloth hut. Dr. Rea considers the best hut to be the Nissen bow with the floor lowered 18 in. so as to give additional head room and with a partition at one end dividing off an office and the developing room. The necessity of adequate ventilation is insisted upon. The provision of a standard portable hut is hinted at—the cessation of hostilities naturally put an end to the plans for this type of hut, which had been prepared at the time of the armistice.

Chapter II deals with the varieties of injury likely to require examination by *x* rays; Dr. Rea is rightly insistent on the necessity of a complete picture being taken of the whole chest, so as to compare the sound with the injured side—a point not infrequently overlooked. The various details to be observed are mentioned and stress is laid on the possibility of severe injuries being due to splintering of ribs; fallacies due to intrapulmonary and parietal haemorrhage are alluded to. A method, founded on clinical and *post-mortem* investigation, of making an approximate estimate of the amount of blood effused may be of value in the investigation of serous effusions in civil practice. It is of interest to note that Dr. Rea saw no cases of "contralateral collapse" in casualty clearing station work.

The third and last chapter contains an account of the methods to be employed in the examination of chest wounds in their early stages. The importance of an accurate knowledge of the appearance of the normal chest and the range of movements of the diaphragm is insisted upon. Dr. Rea gives a clear description of the normal chest with reproductions of *x*-ray plates and diagrams to illustrate his points. The range of movement of the diaphragm shown by his methods is considerably greater than has been usually stated. The methods of localization which he advocates are by double exposure after shifting the tube. Hampson's method, involving the use of sections of the normal thorax, is recommended for finding the depth and location of the foreign body. Experience of this method is entirely satisfactory, but the author's complete disregard of stereoscopic methods will not be endorsed by all.

The book suffers from poorness of literary style, but should be of considerable value to radiographers. There are a large number of good reproductions of *x*-ray plates which enhance the value of the book.

[2] *Chest Radiography at a Casualty Clearing Station.* With Atlas. By R. Lindsay Rea, B.Sc., M.B., late Supervising *X*-ray Officer, Fourth Army. Belfast: Mayne, Boyd, and Son; London: H. K. Lewis and Co. (Cr. 4to, pp. viii + 24 and atlas; 61 figures. 15s. net.)

OBSTETRICS.

PROFESSOR HASTINGS TWEEDY'S *Practical Obstetrics*,[3] which has reached its fourth edition, has all the weight of the writer's experience at the Rotunda Hospital, Dublin, behind it. The author claims the right to be dogmatic on this ground, and dogmatic he certainly is—to the benefit of the undergraduate student. It is unnecessary to say that the teaching is as sound as the reputation of the great hospital from which it emanates, and it is only on points of detail that any criticism can be raised.

The book is not intended to be a textbook of midwifery; it is a most excellent companion to a systematic textbook or course of lectures, focussing the teaching on important clinical points. It is for this reason that, for example, one single chapter embraces abortion, premature labour, vesicular mole, extrauterine pregnancy, accidental haemorrhage, placenta praevia, hydrorrhoea gravidarum, polypus and cancer—all of which present certain common features but important clinical differences. In regard to plugging of the vagina in accidental haemorrhage, the author maintains that the plug, if properly inserted, obliterates the uterine vessels when the uterus is pressed down upon it by a firm binder. He is quite dogmatic on this point and "trails his coat" in true Hibernian fashion for any one, who dares, to tread upon it. Far be it from the reviewer to do so under the veil of anonymity! One does, however, feel inclined to wonder whether even his Rotunda experience justifies the writer in dogmatically using the expression "uterine tendons" when he means the perivascular connective tissue at the base of the broad ligaments. It is regrettable that Professor Tweedy has fallen into the habit of appendices. Surely his papers on the cause and cure of eclampsia, and on his conception of the lower uterine segment, might have been worked into the substance of the chapters dealing with these subjects, even if a considerably extensive resetting of type were necessitated.

The illustrations are on a low level of artistry, which, according to modern standards, is quite unworthy of the letterpress, but most of them succeed in teaching what they are intended to convey—and that, after all, is the most important matter.

The appearance of a second edition of Professor SHEARS'S *Obstetrics*[4] within three years of its original publication indicates that its merits as an essentially practical textbook have more than counterbalanced some of the minor failings to which we were then compelled to draw attention. This second edition is an improvement on the first in these particular respects, and otherwise fully maintains the standard the author set himself. His long practical experience makes Professor Shears's teaching of great value, and many of his sentences are on an aphoristic plane. For example:

> Eclampsia, in most cases at least, is easily prevented. In the present state of our knowledge it is not easily cured.
>
> Uterine inertia. This much abused term is too often used as a cloak for lack of skill in diagnosis or a euphemism to explain certain facts in connexion with the physiology of labour of which we know as yet little or nothing.
>
> Test every pelvimeter with a tape measure or a foot rule.
>
> It is too often assumed that, while the Caesarean section can only be properly performed by the surgical or gynaecological specialist, it makes little difference who makes trial of the forceps or attempts the delivery of the after-coming head (in contracted pelvis). This is a grave error, as every practical obstetrician knows.
>
> There are few cases (induction of labour) in which the delay required for conservative measures involves as much risk as does the additional burden of a rapid operative delivery.
>
> The high forceps operation is to be regarded not as an operation that once begun must be finished at any cost, but . . . as a means of diagnosis, a test of the operability of the case in hand.

As may be judged from these few examples, there is much of great value in this book. It is therefore all the more regrettable that the author insists upon attempting to throw his teaching into high relief by repeated references

[3] *Practical Obstetrics.* By E. Hastings Tweedy, F.R.C.P.I., and G. T. Wrench, M.D. Fourth edition. London: Henry Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. xxi + 557; 159 figures. 21s. net.)

[4] *Obstetrics, Normal and Operative.* By George Peaslee Shears, B.S., M.D., Professor of Obstetrics at the New York Polyclinic Medical School and Hospital, etc., and E. E. Shears, M.D. Second, revised edition. Philadelphia and London: J. B. Lippincott Company. 1919. (Med. 8vo, pp. xx + 745; 419 figures. 30s. net.)

to what he regards as the failings of other textbooks unnamed. We again congratulate him upon some superb reproductions of photographs of the processes of labour.

NOTES ON BOOKS.

The Voyage of a Vice-Chancellor[5] consists of extracts from the private diary of a member of the British University Mission, which made an extensive tour in the United States during the autumn of 1918. The mission was sent out under the auspices of the British Foreign Office at the invitation of the Council of Defence at Washington. Its members travelled many thousands of miles, and visited the leading universities and colleges of the United States and Canada. The author is easily identified as the genial Master of Christ's College, Cambridge, and his narrative is everywhere enlivened with light touches and amusing anecdotes. New York was reached on October 9th, when there began "the series of ceaseless kindlinesses and unbounded hospitalities which continued all our trip." After a particularly assuaging dinner the party left "feeling, as the tablets say in our redecorated churches, 'enlarged, restored, and beautified.'" Immense numbers of speeches were made—as is the custom in America—and by the time the Yale visit was over "the incessant strain of meeting hundreds of hospitable hosts each day, the constant speeches and the eternal lack of sleep had proved too much for more than one of us," and the following day's diary contains the laconic entry "Slept." Speaking of the work of a former pupil whom he found engaged in getting together and setting out collections of artistic objects in the Montreal Fine Art Museums, Dr. Shipley makes this interesting observation: "Like so many students of the biological sciences, he has a real feeling for colour, form, and design."

The fact that HARTRIDGE'S *Refraction of the Eye*[6] has reached its sixteenth edition in a space of thirty-five years is sufficient proof of its popularity. The book has always been a favourite with students because of the simple way in which it is written; it is profusely illustrated with woodcuts to explain the text, and the mind is not overburdened with mathematical formulae, a point which specially appeals to students, and there are many such, whose minds have not been trained in higher mathematics. The present edition does not differ much from the last, but a few additions have been made, and the whole text has been revised. Refraction is essentially a practical subject; there is no short cut or easy road, much time and labour must go to the making of a competent refractionist, and no amount of reading will ever serve instead; no better book, however, can be offered to the student who is beginning his practical work in the out-patient department than Mr. Hartridge's volume.

The first volume of the *Jamaica Public Health Bulletin*[7] contains a record of the work of the members of the Society of Medical Officers of Health of that island, which was founded five years ago. Among the interesting papers it contains is one on the so-called "vomiting sickness" of Jamaica, in which the author, Dr. M. GRABHAM, details a number of the many poisonous plants with attractive-looking fruits or seeds met with in Jamaica, concluding that they are, in all probability, causes of the attacks.

We have already referred to the paper in the current number of *Brain* by Brown and Dujardin on the cerebro-spinal fluid in herpes zoster and the relation of herpes zoster to syphilis. Other papers in the same issue are: on the genesis and physiological significance of spasticity by Walshe, and on the pathological examination of forty intracranial neoplasms by J. Godwin Greenfield.

In *Beverages and their Adulteration*[8] Dr. H. W. WILEY gives an account of the preparation, standard characteristics, and adulteration of all sorts of beverages. Beginning with water, mineral waters, and "soft" (or non-alcoholic) drinks, he goes on to describe tea, coffee, cocoa, and chocolate. More than half the book is occupied with the consideration of alcoholic drinks of all sorts; their preparation and adulteration are described and interesting notes on their history are given. A volume such as this should appeal to a large circle of readers—those who have to do with the analysis of liquors of all sorts, and those who drink them and are interested in what they are drinking.

The second edition of the Catechism Series *Midwifery*[9] contains the compressed and unreasoned information customary in books of this class. It may be recommended to candidates reviewing their knowledge immediately before an examination.

The Practice of Soft Cheese-making[10] is a well illustrated account of a branch of industry of national importance. The book describes the making of a greater variety of soft cheeses than it has ever been our fortune to meet, in a direct and thoroughly practical style. It should be in the hands of anybody with a little initiative who keeps cows, or a cow, or even a milch goat.

THE *Medical Register*[11] for 1919 was issued on July 4th; the delay has been due no doubt to difficulties created by the war. The number of names on the *Register* for the years of the war, 1915, 1916, 1917, 1918, shows a slight upward tendency, but the differences are small. The number added by registration steadily declined from 1,526 in 1915 to 1,077 in 1918. The total number on the *Register* in that year was 43,926; in 1915 it was 43,225. The number of names removed in 1918 by evidence of death was 946; in the previous year it was 801, and in 1916, 983. The annual average number in the last five years is considerably higher than for the last twenty-four. The *Dentists' Register*[12] for 1919 has also been issued. The names on it number 5,567; of these the licentiates and graduates in dentistry number 4,290.

[5] *The Voyage of a Vice-Chancellor.* By A. E. S. Cambridge: The University Press. 1919. (Cr. 8vo, pp. 148; map. 6s. net.)

[6] *The Refraction of the Eye.* By G. Hartridge, F.R.C.S. Sixteenth edition. London: J. and A. Churchill. 1919. (Cr. 8vo, pp. xii + 281; 110 figures. 7s. 6d. net.)

[7] *The Jamaica Public Health Bulletin, 1917.* Edited by Edw. R. C. Earle, M.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond., and L. Oliver Crosswell, M.B., C.M.Aberd. Kingston: Times' Printery. 1918. (Post 8vo, pp. 251. 2s. 6d.)

[8] *Beverages and their Adulteration.* By Harvey W. Wiley, M.D. London: J. and A. Churchill. 1919. (Med. 8vo, pp. 421; 42 figures. 21s. net.)

[9] *Midwifery.* By R. Mary Barclay, M.A., M.B., Ch.B.Edin. Catechism Series. Parts I and II. Second edition. Edinburgh: E. and S. Livingstone. 1918. (Cr. 8vo, pp. 80 and 152. 1s. 6d. net each part.)

[10] *The Practice of Soft Cheese-making.* By C. W. Walker-Tisdale, F.C.S., and Theodore R. Robinson, F.S.I. London: John North. 1918. (Cr. 8vo, pp. 106; illustrated. 3s. net.)

[11] The *Medical Register* for 1919. London: Published for the General Medical Council by Constable and Co. 1919. (Pp. 1214. 10s. 6d.)

[12] The *Dentists' Register* for 1919. Same publishers. (Pp. 140. 3s. 4d.)

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on June 10th thirteen cases were considered and £147 10s. voted to twelve of the applicants. The following is a summary of some of the cases relieved:

Daughter, aged 80, of M.R.C.S.Eng. who died in 1859. She is too old to work. She receives £30 from friends, and £30 from another charity. Pays 25s. a week rent. Relieved seven times, £96. Voted £15 in twelve instalments.

Daughter, aged 62, of M.R.C.S.Eng. who died in 1879. Receives £25 from investments. Her employer is now dead, but she is looking after the house until the son's return home; she receives no salary. Relieved four times, £48. Voted £12 in twelve instalments.

Daughter, aged 55, of M.R.C.S.Eng. who died in 1894. Has no income. Lives with her sister, who also has help from the Fund. Unable to earn anything owing to ill health. Relieved nine times, £120. Voted £12 in twelve instalments.

Daughter, aged 60, of M.R.C.S.Eng. who died in 1879. Only income, £4 from investments and £20 from friends. Pays 8s. a week rent for one room. Suffers from chronic glaucoma. Relieved ten times, £106. Voted £15 in twelve instalments.

Daughter, aged 58, of M.R.C.S.Eng. who died in 1917. Was left unprovided for. Applicant acts as organist at the parish church, for which she receives £12 per annum, and by teaching music she receives about £12 a year. Pays £13 10s. for rent and rates. Relieved twice, £24. Voted £12 in twelve instalments.

Widow, aged 54, of L.S.A.Lond. who died in 1910. Applicant was left with four children, and now receives £2 8s. per week from the two eldest. Owing to the high cost of living she finds it impossible to manage. Relieved seven times, £84. Voted £12 in twelve instalments.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is now called upon, as a result of the war, to deal with many widows and children who, in happier times, would not have thought of asking for assistance. It is glad to receive secondhand clothing and household linen. The class of clothes most wanted is that suitable for boys and girls working in offices, for women, and for old men. The gifts should be sent to the secretary of the Guild, 43, Bolsover Street, W.1.

INCOME TAX.

MARGINAL INCOMES.

DR. R. BRUCE FERGUSON (Watford) has sent us the following memorandum on the provision of the Finance Act of 1916 with regard to incomes just exceeding a limit:

At periodic intervals one comes across articles in the BRITISH MEDICAL JOURNAL dealing with the vexed question of income tax returns which have proved very useful to many. But I have not seen any reference to the method—allowed by the Finance Act, 1916—of assessing incomes which exceed by a small margin an even hundred, nor any advice as to how and when advantage should be taken of this method, or at what figure such advantage ceases.

Briefly put, the method is as follows (earned income alone is dealt with):

Assume one's income to be £501; hand over to the Inland Revenue the excess over £500—in this case £1—and then call the income £500. An example will best illustrate this. In the ordinary way an income of £501 is subject to an abatement of £100 and a tax of 3s. in the £; whilst an income of £500 is also subject to the same abatement, but a tax of 2s. 3d. only. The results of the two methods may be set out thus:

Method 1.	£
Income	501
Abatement	100
Taxable income	401
£401 @ 3s. ... ... =£60 3s.	

Method 2.	£
Income	501
Deduct	1
	500
Abatement	100
Taxable income	400
£400 @ 2s. 3d. ... ... =£45	
Add sum previously deducted ... £1	
£46	

There is thus a saving of £14 3s. by method 2.

As the income increases, so the amount to be "given away" increases, and the limit where the advantage of method 2 ceases is reached when the tax, as estimated by each method, shows the same figure in each. It is easy to calculate at what figure this will occur, and in the case of incomes slightly exceeding £500, the limit is reached at £517 12s. 11d.

Again, an income just over £700 can claim no abatement; but by the sacrifice of a few pounds it can be brought down to one not exceeding £700, which is subject to an abatement of £70. The advantage ceases when the income reaches the amount of £712 7s.

As the wording of the Act is that "the tax payable is not to exceed the sum of" the two amounts as shown in method 2, it might be argued that the surveyor, when preparing one's assessment, has this point in mind, and gives the taxpayer the benefit of it, rendering it unnecessary for him to worry himself further about it. It is, however, always well to be alive to possibilities; moreover, as I hope to show, there are occasions when it is incumbent on the taxpayer to be familiar with this regulation, or suffer in consequence, as no relief can be expected which is not claimed.

For example, if the income is £805, nothing would be gained by giving up the odd £5, and so bringing it down to one not exceeding £800 (since there would still be no abatement to claim, and the tax would be 3s. in either case), if it were not for the fact that an income of £800 can claim relief of £25 for wife and the same for each child under 16 years of age. But the taxpayer who finds his income to be over £800, and sees from the "Instructions" on Form 11 that such relief is granted only on incomes not exceeding £800, thinks it is useless to make the claim, and therefore omits to do so, to his own cost. The taxpayer whose income is slightly in excess of £800 must therefore consider very carefully whether it is not worth his while to sacrifice a few pounds of his income, and by so doing claim the relief to which he would then become entitled.

The following figures, which give the limit of income where all advantage ceases, and where, therefore, no claim for relief need be made, will, I hope, assist him. It follows, conversely, that between £800 and the limit shown in these figures, relief *should* be claimed.

	£	s.	d.
Wife	804	8	3
Wife and 1 child	808	16	5
Wife and 2 children	813	4	9
Wife and 3 children	817	12	11
Wife and 4 children	822	1	2

When the income exceeds £1,000 it is taxable at 3s. 9d., and the sacrifice of a few pounds may bring it into the lower class of incomes not exceeding £1,000, where the tax is only 3s. The limit where this advantage ceases is £1,046 3s. 1d.

A further point is that by this method relief of £25 will be given—if claimed—for each child under sixteen in excess of the first two. Where relief for one such child can thus be claimed, no advantage will accrue by such claim where the income exceeds £1,050 15s. 5d., and in the case of two children £1,055 7s. 8d.

*** The question of the marginal limit points was referred to in articles published in 1916 and 1918, but the limit points were not set out at that time because a further question arises which to some extent affects the calculations. The limit point in almost every case will be affected by the amount of the life assurance allowance, seeing that the greater that allowance the smaller the gain to the taxpayer by bringing his income into a category taxable at a lower rate—for example, on Dr. Bruce Ferguson's first example the gain is stated as £14 3s., but if there were allowances £25 for wife, £25 for life assurance, and £50 for two children the gain would be £14 3s. less (£100 @ 9d. =) £3 15s. = £10 8s. only.

The marginal allowance is undoubtedly a mandatory one—that is, does not need to be specifically claimed—and in general would be granted on the statement of total income which the practitioner would make in the ordinary way. But the point raised in the article that at the £800 and £1,000 limits a practitioner might suffer through forgetting that the operation of the marginal relief in effect raises those limits to persons entitled to claim allowances for wife and children is important, and practitioners will be well advised to complete those portions of the form of return relating to the "wife" and "children" claims if the total income does not exceed, say, £1,100.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

THE annual meeting of the London and Counties Medical Protection Society was held on July 2nd, when Sir JOHN ROSE BRADFORD, K.C.M.G., F.R.S., was in the chair.

The report of the council stated that notwithstanding the difficulties arising from the prolongation of the war during the greater part of 1918 the prosperity of the society had been well maintained. A limited number of members on military service had resigned, but were now rejoining, and a second entrance fee would not be required of them. In addition special arrangements had been made to assist those whose subscriptions had fallen into arrears during their absence abroad. During the year nearly 10 per cent. of the members had availed themselves of the assistance of the society; several law suits were undertaken, the result in the majority of instances being satisfactory to the members concerned. The society had also taken steps to restrain unqualified medical and dental practice, so far as the present unsatisfactory state of the law allowed.

Major C. M. FEGEN, the treasurer, stated that the financial position of the society was never better than at the present moment. In view of possible liabilities, however, he thought that it should not rest content with a reserve of less than £100,000.

Sir JOHN ROSE BRADFORD was re-elected president, and in acknowledging the compliment said that he could conceive nothing so likely to relieve the anxieties of a practitioner as to feel that a body of this kind was at his back.

All the vice-presidents were elected again, with the addition of Mr. C. W. Glassington, L.D.S., and to fill vacancies on the council Drs. Percy Norman Cave and Montague Frank Hopson were elected. Very appreciative tributes were paid to Dr. Hugh Woods on his re-election to the general secretaryship.

THE meeting of the twenty-sixth Congress of the Italian Surgical Society at Trieste has been postponed till October owing to the lack of sufficient lodging accommodation.

As a part of the re-education of injured soldiers Columbia University, New York, has recently established a course of musico-therapy, in which the indications for the use of specific musical instruments for specific ailments in the "psychoses and neuroses of shell-shocked men," and the "effects of key, rhythm dynamics, timbre, colour, pitch and vibratory musical massage for curative results" will be studied.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

WE publish below a further list of the names of subscribers to the Fund for presenting Sir Clifford Allbutt with his portrait. It will be seen that some subscriptions have recently been received from India and America. As it is intended to close the Fund from July 31st, the Treasurer requests all those who wish to take part in the presentation, but who have not yet notified their intention, to send their subscriptions without delay. The amount is limited to one guinea. Cheques and postal orders should be made payable to the "Sir Clifford Allbutt Presentation Fund," crossed London County, Westminster, and Parr's Bank, and addressed to the Treasurer of the British Medical Association, 429, Strand, London, W.C.2.

After the portrait in oils has been painted it is intended to commission a mezzotint engraving from it which subscribers to the Fund will be able to purchase for their own collections.

Dr. T. D. Acland (London)
Dr. R. Atkinson (Smethwick)
Dr. A. G. Auld (London)
Dr. William Bain (Harrogate)
Sir Harry Baldwin (London)
Dr. E. Billing (London)
Dr. W. Blair (Jedburgh)
Dr. A. Bowe (St. Neots)
Dr. Byrom Bramwell (Edinburgh)
Sir John F. H. Broadbent, Bt. (London)
Dr. A. Bronner (Bradford)
Dr. J. Mitchell Bruce, C.V.O. (London)
Lady Butlin (London)
Dr. Archibald Campbell (Newcastle-upon-Tyne)
Lieut.-Colonel Aldo Castellani (London)
Dr. Vivian E. Chang (Leeds)
Dr. W. Chisholm (Sydney)
Dr. J. F. Churchill (Chesham)
Dr. J. M. Cowan (Glasgow)
Dr. C. R. Crowther (Plymouth)
Dr. T. L. Drakes (Chepstow)
Dr. D. Durran (Thurso)
Major General W. R. Edwards, C.B., C.M.G., D.G. I.M.S.
Miss A. Estcourt-Oswald (Colchester)
Dr. J. S. Fairbairn (London)
Dr. W. J. Fenton (London)
Captain Charles Forbes, O.B.E. (Liverpool)
Sir James K. Fowler, K.C.V.O., C.M.G.
Dr. W. O. Greenwood (Poppleton)
Dr. F. W. W. Griffin (Fulham)
Surgeon Lieutenant Commander S. W. Grimwade, R.N.
Dr. G. A. Hamerton (London)
Dr. M. Handfield-Jones (London)
Dr. C. R. Harper (Peckham)
Dr. C. L. Hawkins (Birmingham)
Dr. K. R. Hay (London)
Captain H. G. Hill, R.A.F.
Dr. Joseph Horne (Glasgow)
Dr. T. Aubrey Jones (Tunstall)
Colonel Herbert Jones, R.A.M.C. (Hereford)
Professor W. W. Keen (Philadelphia)
Colonel G. Lee (Dewsbury)
Dr. J. Livingston (London)
Mr. Arthur Lucas (Buckingham)
Dr. A. Lyndon (Hindhead)
Brevet Lieut.-Colonel R. McCarrison, I.M.S. (Madras)
Dr. Michael McDonough (Galway)
Dr. Eneas K. Mackenzie (Tain)
Dr. Archibald N. McLellan (Glasgow)
Dr. W. S. Melville (Lenzie)
Dr. William Millar (Brough)
Captain C. S. Miller (Nottingham)
Dr. H. H. Mills (London)
Dr. G. B. Muriel (Whitehaven)
Major E. H. Mydelton-Gavey (Flax Bourton)
Dr. David Nabarro (London)
Dr. Alexander Napier (Glasgow)
Dr. J. H. Naismith (Tow Law, co. Durham)
Dr. W. Noble (Baillieston)
Dr. J. C. Norman (Hebburn-on-Tyne)
Dr. T. O'Kelly (Chipping Norton)
Dr. A. Orme (Leyton)
Dr. H. Holmes Orr (London)
Dr. John Parkinson (London)
Dr. A. R. Parsons (Dublin)
Dr. A. R. Paterson (Parkstone)
Surgeon Commander C. A. G. Phipps, R.N.
Dr. E. E. Prest (New Cumnock)
Captain J. R. Rees, R.A.M.C. (Epping)
Dr. J. Lloyd Roberts (Liverpool)
Dr. J. McGregor Robertson (Glasgow)
Dr. H. J. Robinson (Kirkoswald)
Dr. J. B. Ronaldson (Beaconsfield)
Dr. James Russell (Sandhurst)
Captain S. K. Sanyal, I.M.S. (Handsworth)
Dr. M. Seeraj (Liverpool)
Dr. B. H. Shaw (Stafford)
Professor W. J. Simpson, C.M.G. (London)
Dr. W. M. Smith (Eastbourne)
Dr. W. Snodgrass (Glasgow)
Dr. C. H. Swayne (Dublin)
Dr. Horace Sworder (Luton)
Dr. J. H. Tallent (Chislehurst)
Captain E. C. Tamplin, M.C., R.A.M.C.
Dr. John Teacher (Glasgow)
Dr. W. H. M. Telling (Leeds)
Dr. A. Tennyson-Smith (Orpington)
Dr. J. L. Thomas (Newport, Mon.)
Professor Arthur Thomson (Oxford)
Professor W. Thorburn, C.B. (Manchester)
Dr. A. J. Vause (Hastings)
Dr. E. Ward (Wokingham)
Mr. Hugh T. A. Warnock (Invereske)
Dr. T. Boswall Watson (Woldingham)
Captain T. T. B. Watson, R.A.M.C.
Dr. John White (Nailsea)
Dr. John Whyte (South Shields)
Dr. W. Charrington Wood (Penshurst)
Dr. H. C. S. Woodward (Abingdon)

RECRUITING FOR THE R.A.M.C.

STATEMENT BY THE D.G. A.M.S.

WE have received the following communication for publication:

"As there appears to be some misunderstanding as to certain points in connexion with the terms of the recent offer by the War Office of engagement in the Royal Army Medical Corps for service with the Army of Occupation, the Director-General Army Medical Service makes the following explanation:

"(1) Officers who are at present serving in the Royal Army Medical Corps under contracts for twelve or six months or other definite stated periods will be required to complete these engagements, with the option of entering into the new contract on termination.

"(2) Officers who are serving under contracts 'until the termination of the present emergency' will be eligible for demobilization on the statutory date for the end of the war which will be published, and the gratuities payable under such contracts will be issuable on that date.

"(3) All officers who are at present serving may offer themselves for service with the Army of Occupation (such service to commence on the day following the completion of their present contracts) under the terms of the recent offer—namely, for a period of twelve months or until their services are no longer required, whichever may happen first, at a salary of £550 per annum, *plus* rations or the allowance in lieu. The sum mentioned is inclusive of both bonus and gratuity, and no additional emoluments of any kind are issuable.

"(4) Officers holding the acting rank of Lieutenant-Colonel or Major will be required to sign a contract embodying the above terms, but will draw the pay and allowances of their acting rank whilst holding it, the contract terms as to emoluments remaining in abeyance during that period; they will revert to contract rates on ceasing to hold the acting rank.

"(5) Field Officers of the Territorial Force and Special Reserve will receive the pay and allowances of their substantive field or acting rank.

"(6) Officers will continue to draw Children's Allowance for the present."

THE NEW CONTRACT.

Possibility of Release.

We are asked whether an officer R.A.M.C. at present serving who enters into the new contract with the War Office on August 4th for a "year, or until no longer required, whichever shall first happen," would be released by the War Office should he obtain an appointment under another ministry at a date later than August 4th.

*** We are informed that the War Office will not undertake to do this, but should the officer not get the appointment under the other ministry he could then join the R.A.M.C.

British Medical Journal.

SATURDAY, JULY 12TH, 1919.

MEDICAL PENSIONS BOARDS.

THE evidence given by Sir Douglas Haig before the Select Committee on Pensions last week has been read by many with concern and regret. His charges were enumerated under nine heads, but his remedies were summarized under three—first, a greater generosity on the part of the State; secondly, a single authority to co-ordinate the work of the Ministers; and thirdly, an improvement in the pensions machinery, which he asserted was working laboriously but too slowly and in many cases unsympathetically. The memorandum he put in was very strongly worded, and contained some sensational stories calculated to raise public indignation against the authorities of the Navy, the Army, and the Ministry of Pensions, and, by implication, to put a serious slur on the medical profession. With regard to two specific instances of alleged hardship to officers related by the Field Marshal, it has been shown by the Ministry of Pensions and the Admiralty respectively that he must have relied on secondhand hearsay evidence, and that he had thus allowed himself to be made responsible for statements which were wholly inaccurate. It is necessary to refer to this matter, for the discovery of such errors must discount the value of his evidence and throw doubt on all his conclusions; but our chief concern is with allegations against the competence and good faith of the medical boards of all kinds. He alleged that in some instances members of the board "are ignorant of the actual disease suffered." The phrase is far from clear, and we find difficulty in knowing what significance should be attached to it. Does it mean that the members are insufficiently acquainted with the prognosis of certain diseases unfamiliar in this country? Or does it mean that the members are not supplied with the proper history of the man's case? In the latter alternative the fault must lie with the military authorities, and we have no doubt that the Field Marshal will use his influence to have it remedied. In the other alternative there need be no false shame in admitting that the work of assessing pensions for disability due to disease was new to the great majority of civil practitioners in this country. The public—rightly as we think—demanded that they should take a large share in this work, but in any case the immense amount that had to be done would have made it necessary to enlist their help.

The work of the Pensions Medical Boards has from the first been conscientiously done, and its quality has steadily improved as experience has been gained. The Ministry has recently been careful, by the circulation of special information and instructions, to take its share in the steady improvement which has been going on. We do not believe that any local medical boards "treat every wretched individual who appears before them as a malingerer," but we are rather afraid that the medical department of the Ministry of Pensions may have been at one time inclined to this view. The Ministry was not at first organized on a proper footing, and the medical—the most important department—was, unfortunately, no exception.

Speaking with some knowledge of the experience of other countries, we pointed out several years ago that if the problem of pensions, even then large and daily growing larger, was to be solved with fairness to the fighting man and to the taxpayer, the medical department must be so organized that it would act promptly under the guidance of skilled medical and surgical advice. Unfortunately things were allowed to drift, and the new Minister and his staff found on their hands a huge task without any adequate organization for dealing with it. Sir Douglas Haig paid a tribute to the courtesy and sympathetic attitude of the present Ministry of Pensions, and we are glad to know that with the advent of Sir Laming Worthington Evans and a well organized medical department under Colonel A. L. Webb there has already been a great advance, and that all hands are resolved on speedily making further improvements. We entirely agree that decentralization is necessary, and we understand that it is now in progress; we also agree that the system under which disability was reassessed at the Ministry of Pensions without the individual being seen or heard is very liable to error unless carefully safeguarded and wisely administered. The risk was the greater because the man's pension might be altered by the board of medical assessors at Chelsea, not only without seeing the man, but also without reference to the medical board who saw him and reported on his physical condition. A further disadvantage of this arrangement was that the boards of first instance never knew the fate of their recommendations, never knew whether they were accepted or changed—upwards or downwards. This may account for Sir Douglas Haig's complaint that there has been a lack of uniformity in the decisions of the boards. The present medical department of the Ministry of Pensions is well aware of this defect in the machinery, but we hope that the Minister will not accept the Field Marshal's curious suggestion that it might be remedied by the appointment of a selected combatant officer to act as assessor, for it is not easy to see how an officer ignorant of medicine could be of any assistance to a medical board in determining the degree of disability. The Select Committee has taken a good deal of evidence on this point. It is unsatisfactory that one medical assessor, *plus* papers, should overrule the verdict of three medical officers, *plus* papers, *plus* patient. The Ministry intends, we believe, to provide that if in the future the medical assessors differ from the finding of the board of first instance, all papers are to be referred back in every case where the information is inadequate, or the findings are judged to be faulty or not in accordance with the standard sought to be maintained at head quarters. If the process of decentralization is carried out the assessor will often be able to attend the local board and discuss the case with its members—obviously the proper course in any doubtful case.

Upon one matter it seems to us that the Field Marshal went entirely off the track. He said that the need for reform in the method of treatment of gas poisoning, shell shock, and neurasthenia was crying. It was admitted, he said, that the treatment of these conditions was no easy matter, and we agree that the diagnosis between malingering and functional disorder is often a matter of great difficulty; the diagnosis of functional from organic disability may be equally difficult. No one, however, who has seen a large number of pensioners can doubt that when the interests of the taxpayer and the pensioner are in conflict, the medical board is disposed to incline the balance in favour of the latter. It is easier to mistake functional for organic disease than vice versa, and in a mixed case it may be a matter of extreme

difficulty to estimate the amount of functional disability which is grafted upon an organic basis. The tendency of medical boards generally is to give the patient the benefit of the doubt. As to the need for reform in the method of treatment, a great deal of knowledge has been gained through the work of French and British psychologists and neurologists, and no one with even a superficial acquaintance with the work of a neurological centre here or in France can doubt that treatment in such cases to-day is very much more efficient and effective than even two or three years ago.

THE CAUSAL ORGANISM OF YELLOW FEVER.

THE causal organism of yellow fever has been the object of much research both before and since the heroic Yellow Fever Commission consisting of Reed, Carroll, Lazear, and Agramonte proved in 1900 that the disease was conveyed by the mosquito *Stegomyia fasciata*. It was shown soon after by Carroll that subcutaneous injection of diluted blood from a yellow fever patient can, after passage through a new and sterilized Berkefeld filter, produce the disease, and it has therefore been assumed that the virus is a filter-passer. Special interest therefore attached to the announcement made in our issue of May 24th that Noguchi of the Rockefeller Institute, working with the Yellow Fever Commission of the International Board of Health (1918) in Guayaquil, Ecuador, the last remaining endemic centre of the disease, had found a spirochaete closely resembling in its morphology the causal organism of spirochaetosis icterohaemorrhagica. He has now published three papers[1] on the symptoms and pathology of yellow fever, founded on an analysis of 172 cases, on experimental transmission of the disease to animals, and on the symptoms and pathological changes in the animals thus infected. In the first paper it is shown that the yellow fever in Guayaquil was clinically and pathologically identical with the disease, whether endemic or epidemic, described elsewhere by other observers, the incubation period varying from three to six days, and the conjunctivae becoming slightly yellow on the second or third day. This preliminary account would meet the conceivable criticism that the disease in Guayaquil was not genuine yellow fever.

In the experimental transmission of yellow fever to animals blood drawn from the median basilic vein of patients at various stages of the disease, mainly during the first week, was injected before coagulation into the peritoneal cavity of mammals and into the pectoral muscles of birds. Nine kinds of mammals and nine species of birds were tried, but most of them proved very slightly susceptible, and eventually guinea-pigs, which were so successfully employed for the purpose of investigating spirochaetosis icterohaemorrhagica by Inada and Ido, were chiefly used. Out of seventy-four guinea-pigs inoculated with blood from twenty-seven cases of yellow fever, eight, representing six cases, after an incubation period averaging three to six days, developed symptoms and lesions corresponding to the disease in man; and in the blood, liver, and kidneys of these guinea-pigs a minute organism closely resembling in its morphology the causal agent of spirochaetosis icterohaemorrhagica was found. This organism, which is provisionally called *Leptospira icteroides*, can also be directly cultivated from the blood of yellow fever patients. It is, however, immunologically distinct from the species responsible for spirochaetosis icterohaemorrhagica, but this subject will be more fully discussed in future papers. It may here be mentioned that in 1917 Noguchi pointed out that the *Spirochaeta icterohaemorrhagiae* of Inada and his Japanese colleagues differed from all other spirochaetes both morphologically and in resisting the destructive influence of a 10 per cent. solution of saponin, and accordingly he describe it as a separate genus, *Leptospira icterohaemorrhagiae*.

Obviously further points remain to be made out; the life of the organism in the mosquito is an interesting problem, and as some of the protocols of the experiments incidentally mention that the infected guinea-pigs were in mosquito cages with stegomyias, it appears certain that a series of further reports may be anticipated.

Immediate injection of blood from a yellow fever patient into a guinea-pig may fail to reproduce the disease, whereas a portion of the same blood, after temporary enrichment of the virus by cultivation in a medium composed of Ringer's solution and 0.3 per cent. neutral agar is successful. The explanation of this is—as experiments to be published later, we are told, show—that the blood serum of yellow fever patients contains immune bodies antagonistic to the development of the organism in the guinea-pig. The virulence of the *Leptospira icteroides* varies; it may produce a fatal infection in some guinea-pigs, an abortive disease in others, and in yet others no obvious effect. It can be passed from one guinea-pig to another by timely transmission, and a guinea-pig that survives infection becomes immune. The symptoms and morbid changes induced in guinea-pigs are much more pronounced than those observed in dogs or marmosets; but the experimental disease closely resembles human yellow fever, which, as regards its intensity, is intermediate between the manifestations produced experimentally in marmosets on the one hand and in guinea-pigs on the other.

The morphological similarity between the *Spirochaeta icterohaemorrhagiae* and Noguchi's *Leptospira icteroides* may be correlated with the clinical resemblance between spirochaetosis icterohaemorrhagica and yellow fever, commented on last year by Nolf and Firket,[2] and raises some further important questions. The infection of spirochaetosis icterohaemorrhagica is generally believed to be spread by the excreta of rats and to enter the body either with contaminated food and drink or directly through the skin; but Nolf and Firket argue that, as the disease is most virulent in hot weather and dies out in the winter, when wet weather would favour ordinary contamination of food and the skin, the disease is conveyed by some biting insect active during the summer. This conception is rendered all the more attractive by the analogy of yellow fever, now that Noguchi has shown such good reason to believe that the latter disease is due to a closely allied organism. It also clearly follows that serum treatment, already employed in spirochaetosis icterohaemorrhagica, should be applicable on similar lines to yellow fever. Although Noguchi is silent on this point, it seems safe to assume that the serum of convalescent patients and animals has been tested for its curative properties and that the results will be forthcoming before long. Finally, it is surely appropriate that the prospect of this cure for "that dreadful scourge yellow fever," to quote from the memorial inscription to Dr. Walter Reed, who "gave to man the means of control" over its occurrence, should open before us just when the Dogs' Protection Bill, with its threat to the future of such work in this country, has fortunately been rejected.

[1] H. Noguchi, *Journ. Exper. Med.*, Baltimore, 1919, xxix, 547-556.

[2] Nolf et Firket: *Arch. méd. belges*, Paris, 1918, lxxi, 380.

AMERICAN HOSPITAL FOR GREAT BRITAIN.

PLANS for the establishment of an American hospital in London are now in so advanced a stage that a meeting of the governing council will be held next week at the house of the Royal Society of Medicine, at which Lord Reading (who has accepted the presidency of the hospital) and the American Ambassador have promised to be present. Upon the signing of the armistice last November it was considered that the moment was ripe for bringing the project of an American hospital to the consideration of the medical profession in Great Britain as well as of the American colony in London. The promoters were of opinion that the need of the foundation of such a hospital was obvious, and that the exceptional opportunities of the moment were never likely to recur. The medical profession in America and in Great Britain has hitherto worked too much apart, although each has much to learn of the other. The incidence of the war has brought them into closer contact. Sir Anthony Bowlby has recently in *The Times* borne warm testimony to the sympathy between the medical profession in the United States and in Great Britain. He recalls that "an American unit from Harvard University, under Colonel H. Cabot, completely staffed one of our general hospitals in France as early as 1915, and in 1917 six more British hospitals in France were staffed by the United States. In 1917 the British army in France had one to two hundred American surgeons working on our front with regiments, field ambulances, and casualty clearing stations, and not a few of them were killed or wounded while serving under the Union Jack. The services they rendered at a time when we were very short of surgeons should never be forgotten, and it would be impossible to overestimate the cordial good fellowship and mutual regard and esteem which prevailed everywhere." American medical men have not only been attached to British units in the field, but have worked side by side with the British medical man upon the staffs of military hospitals in all parts of England and Scotland. The help given in the hospitals of this country, especially by the teams of orthopaedic surgeons who came over when we were in dire need of their skill, will never be forgotten. The comradeship brought about by such friendly co-operation and interchange of scientific knowledge is of such importance to the future of the two nations that it must be encouraged and strengthened in every possible manner. The scope which should be given to the hospital was discussed by a Medical Executive Committee, consisting of Sir William Osler, Sir Arbuthnot Lane, Sir Humphry Rolleston, Sir John Bland-Sutton, Mr. J. Y. W. MacAlister, and Mr. Philip Franklin. At the Congress of the American Surgical Association and the American Medical Association in Atlantic City last month, Sir Arbuthnot Lane notified officially that the hospital would be established. He pointed out that no more fitting monument could be raised to those who had fallen in the war, and that the hospital was designed to form the headquarters for American medical men who visited Europe for the purposes of post-graduate study. At the Congress the plans of the Committee, as described by Sir Arbuthnot Lane, were received with enthusiasm, and he was assured by distinguished members of the profession that the medical men of America were keenly alive to the great value of such an institution in England as a centre for study and research. A committee was then formed to ensure the co-operation of American doctors upon a definite footing, and to act in conjunction with the Executive Committee in London, and, if desirable, to work under the National Research Council at Washington. This American Committee consists of Dr. George W. Crile, of Cleveland, appointed by the American Academy of Sciences on International Relations; Dr. W. J. Mayo and Dr. Charles H. Mayo of Rochester, Minnesota; Dr. Albert J. Ochsner of Chicago; Dr. Rudolph Matas of New Orleans; and Dr. Franklin Martin of Chicago, appointed by the American Gynecological Association. This committee will send a delegate to assist the London Medical Committee here in the detailed organization of the hospital. It has, we are informed, been planned upon the most modern lines, and will be complete in every department of medical and surgical activity; accommodation will be arranged for every class of patient. A research institute, modelled upon the Rockefeller Foundation of New York, will form an integral part of the building. The consulting staff will bring together many distinguished members of the profession in the United States and Great Britain. The visiting staff will be nominated by the Executive Medical Committee. The Governing Council of the Hospital consists of many prominent members of the American colony in London. Mr. Philip Franklin, F.R.C.S., is acting as honorary secretary.

THE MEDICAL CORPS, UNITED STATES ARMY.

GENERAL PERSHING, Commander-in-Chief of the American Expeditionary Forces, in a letter to Brigadier-General Walter D. McCaw, Chief Surgeon to the Forces, pays a warm tribute to the medical corps. He expresses his personal appreciation of their splendid services at the front and in the long chains of hospitals extending down to the base ports. He said their achievements had added new glory to the noble profession they had so ably represented. Many of them had shared with the line troops the hardships of campaign conditions, and had suffered casualties and privations with a fortitude beyond praise. Special praise was due to those who had served continuously with the armies of their allies. Their efficiency and high ideals had won the highest praise of the Governments under whom they had served. According to a statement recently issued by the Surgeon-General of the United States Army 442 casualties occurred among the medical officers of the American Expeditionary Forces in France from July 1st, 1917, to March 13th, 1919. Of these 22 died of wounds, 9 of accidents, 101 of disease; 46 were killed and 7 were missing in action; 4 were lost at sea. There were 38 prisoners unwounded, 47 wounded in action (degree undetermined), 93 severely wounded in action, and 72 slightly wounded. The Surgeon-General has appointed a board to consider criticisms and suggestions relative to the medical service submitted by officers as the result of their experience during the war.

RED CROSS AMBULANCE FOR HOME USE.

THE response to the offer of the Joint War Committee of the British Red Cross and St. John Ambulance Association, to supply some of the motor ambulances sent home from France for use in this country to transport accidents and acute cases to hospital and transfer them home again, has fully justified the expectations of those who believed that such a scheme would meet a real want in the rural counties. Applications were invited from 99 county areas, and have been received from 89. Allotments of ambulances numbering altogether 206 have been made to 76 counties; 13 applications are in abeyance for some local reason. Out of the 206 cars allotted, 73 have been delivered to county directors for service. These figures show that 89 county areas out of 99 have been, or are being, dealt with. Of the remaining 10, there are 3—Isle of Wight, Guernsey, and County Limerick—which state that the scheme is not necessary in their areas. The remaining 7 include the county areas of London City and County, Birmingham, Bristol, and Middlesex, places which, under the conditions of the scheme, it is not intended to attempt to serve until the needs of the rural districts of the country are met. Considerable difficulty in delivering the ambulances has been occasioned by the refusal of the various railway companies to carry the cars to their destination on the ground that as the cars can be driven they should be delivered by road and thus relieve the congestion of railway traffic. This has necessitated county directors

sending their own drivers to London to take delivery of the cars allotted. An arrangement has, however, now been made with Miss Hutchinson of the First Aid Nursing Yeomanry, that she and some of her colleagues, who gave the Joint Committee such excellent service in France, shall assist county directors by driving ambulances down to the various localities on repayment of out-of-pocket expenses. The offer has already been accepted by a good many county directors.

TREATMENT OF PERSONS IN PERIL OF HYDROPHOBIA.

THE Memorandum on the procedure to be adopted in the case of a person bitten by a dog suspected or ascertained to be rabid has been revised and reissued. The arrangements made and now to be carried out by the Ministry of Health, as successor to the Local Government Board, centre in the medical officer of health of the district in which the bitten person resides. He will act under the advice of the Ministry of Health. The arrangements for bringing a case to the notice of the medical officer of health appear to be cumbrous. A person bitten by a stray dog or a dog exhibiting unusual behaviour is advised at once to inform the police, with a view to the necessary inquiries being made. Apparently the police then inform the Board of Agriculture and Fisheries, and that Board passes on the information to the medical officer of health, who then reports to the Medical Department of the Ministry of Health, giving particulars—the day on which the bite was inflicted, its severity and the part of the body bitten, the name and address of the owner of the dog, or other information which will enable the dog to be identified, and as to whether rabies in the dog has been diagnosed locally. Having received this information from the medical officer of health the Ministry of Health will proceed to ascertain the opinion of the veterinary officers of the Board of Agriculture and Fisheries on the facts in their possession regarding the suspected dog, and having obtained this information will let the medical officer of health know if the veterinary officers advise that the dog is to be regarded as rabid. Should there be much delay in making a definite diagnosis the Board of Agriculture will advise the Ministry of Health whether the symptoms of the dog are sufficient to justify antirabic treatment before the confirmatory diagnosis is available, and the Ministry of Health will then pass this information on to the medical officer of health, who is to await instructions from the Ministry of Health before sending cases for treatment. One short cut has been devised, inasmuch as the Board of Agriculture is authorized to communicate directly with the medical officer of health if it becomes aware that a person has been bitten by a dog suspected of being rabid. As most persons bitten by a dog nowadays are almost sure to take the advice of the Ministry of Health "to get the immediate services of a doctor," it almost seems to us that the reasonable plan would be for the doctor or the patient, or both, to communicate direct with the medical officer of health. The final decision whether or no antirabic treatment is essential rests with the medical officer of health, and there are now six places where the treatment can be carried out: In London—Dr. Dudgeon (Department of Pathology, St. Thomas's Hospital, S.E.1); Plymouth—Dr. Pethybridge (11, Whitefield Terrace); Cardiff—Dr. Schölberg (King Edward VII's Hospital); Birmingham—Dr. Leonard G. Mackey (141a, Great Charles Street); Manchester—Dr. W. J. Reid (10, St. John Street); Newcastle-upon-Tyne—Dr. Alfred Parkin (Royal Victoria Infirmary). The vaccine employed at these centres is a carbolized antirabic vaccine prepared in the laboratory of the Ministry of Health. The hospitals named do not, except by special arrangement, undertake to provide indoor accommodation for patients undergoing antirabic treatment; if the M.O.H. is satisfied that a person who needs such treatment cannot afford the expense of residing at the centre for two or three weeks he will represent the matter to the district council, in order that the requisite funds may be provided. The memorandum concludes with the following paragraph: "Attention may again be drawn to the importance of securing all possible expedition in the above procedure." Could it not be simplified?

DIGITALIS IN THE RHEUMATIC HEART OF CHILDREN.

SINCE 1910 our conceptions of the mode of action of digitalis and its therapeutic scope have undergone considerable modification as the result of the work of Sir James Mackenzie and his followers. The conditions for which the drug may reasonably be given have been more accurately defined and restricted. Formerly the principal action of digitalis was held to be slowing of the pulse; but with the recognition of auricular fibrillation orthodox opinion has come to the conclusion that excessive slowing of the pulse with ordinary doses of the drug occurs only in that condition. In 1917 Dr. Thomas Lewis said that there were a large number of carefully observed cases of auricular fibrillation in which the rate of the ventricle had undoubtedly been controlled by digitalis, but no comparable series of cases in which, with a normal sequence of chamber contraction, digitalis has been shown to have a similar effect, or, in fact, any striking beneficial effect. Dr. G. A. Sutherland has taken up this challenge, and, in a paper[1] of considerable practical importance in regard to the treatment of rheumatic hearts in children, points out that a regular heart showing signs of failure may be beneficially acted upon by digitalis. All his patients were under 14 years of age, and after acute or subacute rheumatism were left with a persistently rapid pulse rate of from 115 to 130, due to activity of the sino-auricular node induced by the rheumatic poison. Digitalis was not given until the temperature was normal; then after full doses for three or four days, or after a longer interval when smaller doses were given, the pulse rate fell thirty or more beats a minute and the cardiac efficiency was thereby improved, as was well shown by the condition of the liver, relief from dyspnoea, and so forth. This effect can be maintained by continuing the use of digitalis in small doses for a period varying in different cases; and by this means the period of convalescence is much shortened, and the prolonged rest in bed, which cautious physicians have as a rule enforced, is rendered unnecessary. The action of digitalis is to inhibit overaction of the sino-auricular node, and is just as specific as is its inhibitory action on the auriculo-ventricular node and bundle in auricular fibrillation.

THE PRICE OF MILITARISM.

FOR some time a Danish committee has been engaged in collecting information as to the cost of war in terms of human life, and the results as regards Germany have now been issued.[2] The information is still, of course, fragmentary, and Dr. Döring, the author of the report, has perhaps not sufficiently allowed for the decline of the birth rate which would certainly have continued in Germany, as elsewhere, even without a war, while his attempt to separate civilian from military losses has probably not been altogether successful. Nevertheless his main results can probably be accepted. The effect of the war upon the birth rate manifested itself as increasingly important from April, 1915, onwards, and within the first year, reckoning from April, 1915, the births were 21 to 24 per cent. fewer than in the last year before the war. The accumulated deficit of births by the end of the war amounted to 3½ millions. The deaths steadily increased, and were more than 2 millions above those which would have been expected to occur under

[1] *Quart. Journ. Med.*, Oxford, 1919, xii, 183–211.

[2] Bulletin No. 4 der Studiengesellschaft für sociale Folgen des Krieges: Die Bevölkerungsbewegungim Weltkrieg, von C. Döring. Deutsch and, 2nd edition, Copenhagen, 1919.

pre-war conditions; if, as seems probable, not more than 1,800,000 of these can be attributed to the direct effects of fighting, the death toll of civilians was considerable and was taken mainly in the years 1917–19, when the effects of under-nutrition were becoming prominent. Testimony to this is afforded by the course of mortality from tuberculosis; there were 56,861 deaths from this cause in Prussia in 1913; the numbers increased each year and amounted to 66,544 in 1916, but the difference between 1917 and 1916 is much greater than that separating 1916 from 1913; in 1917, 86,217 persons died of tuberculosis. Secondary evidence pointing in the same direction is the increase of deaths attributed to dysentery (121 in Prussia in 1913, 882 in 1916, 7,652 in 1917) and the fact that the rate of mortality in the first year of life did not share in the general increase to any important extent. The price paid by Germany amounts to about 5½ million lives, more than two of these millions actual deaths, the balance made up of the births lost. The actual population is some 2,700,000 less than in 1913, the proportion of the sexes utterly disturbed. At ages 20 to 50 the sex ratio before the war was 1,000 males to 1,005 females, now it is 1,000 males to 1,155 females. Of men of military age 13 per cent. are gone. In Dr. Döring's words, "To a definite loss of more than 5½ million human beings is to be added a long continuing decline of the birth rate and for years to come a higher rate of mortality." Such is the end of the attempt to secure a Germany hegemony. These figures teach another lesson—that of the importance of the food factor in the great war. The measures advocated by the English physiologists had precisely the effect predicted, and their calculations as to the time when the strain would become unbearable were fully justified. Germany lost the war in the granary, and the chief contributory causes were her poor comprehension of racial psychology and her love of the spectacular side of war. Her delay in the institution of ruthless submarine warfare and her laboured attempts to throw the blame upon her foes did not have the psychological effects in conciliating neutral opinion which she anticipated, while the lust for Dreadnoughts no doubt precluded her from constructing before 1915 an overwhelming fleet of submarines. Had she been able to mobilize in 1914 an armada of submarines comparable with that of 1916 then, since it takes at least twelve months to convince a British administrator that scientific investigation is more than an agreeable hobby and its results of any importance at all, there would have been more than a sporting chance of bringing us to our knees. This should be a pleasant topic of meditation for those Teutonic war lords who survive the vengeance of the conquerors, and will perhaps be pondered by the very large proportion of Englishmen who still despise science in their hearts.

BRITISH SCIENTIFIC PRODUCTS ON EXHIBITION.

A SECOND exhibition of British scientific products and processes, arranged by the British Science Guild, was opened by the Marquis of Crewe at Westminster Central Hall on July 3rd. The first exhibition, a year ago, was intended to show how, under the stress of war, the nation had made itself independent of products previously obtained from the enemy; the object of the present exhibition is to promote the development and peace-time application of the industries thus established and to encourage new manufacturing enterprise which is dependent upon science and invention. A tour of the exhibition suggests that the greatest scientific progress of the war years has been made in mechanical engineering, especially in the design of all kinds of instruments of precision—balances, limit gauges, micrometers, and physical apparatus generally. The science of measurement seems at length to be taking its appointed place in industry. The exhibition includes various displays of pharmaceutical products, serums and vaccines, stains and reagents for microscopic work, surgical and diagnostic instruments of recent introduction, *x*-ray and electro-medical appliances, and laboratory equipment. Most of these exhibits figured at the exhibition held in connexion with the Clinical Meeting of the British Medical Association in April last, and were noticed on that occasion. A noteworthy display in the building is the wireless telephone of the Marconi Company. This is not the place for a full technical description, even if it could be given at present, but the instrument depends upon the principle of the electric valve, which generates the high-frequency currents necessary; these currents are passed on to the transmitting "aërial," from which the energy is radiated in the form of ether waves, and these waves are made to vary at acoustic frequencies by the vibrations of the human voice acting upon the transmitter diaphragm so that the variations are reproduced upon the diaphragm of the receiver. The range for telephonic transmission with this apparatus is stated to be at least sixty miles over normal flat country, and we believe it has already been applied to direction finding for aircraft. Aircraft figures largely in the exhibition; among other things, the oxygen apparatus by which pilots have overcome the difficulty arising from rarefaction of the atmosphere at altitudes of 20,000 feet or more is shown. The British photographic industry, again, has made great advances during the war, both in optical and chemical production. A process of tropical photography is shown whereby the addition of certain salts to the ordinary hardening bath is said to prevent softening of the film even at very high temperatures. An exhibition so varied, including as it does paper making and illustration processes, fuels and metallurgy, textiles and dyeing, and many other branches of applied science, suffers greatly from its cramped quarters, and if another exhibition of the kind is held it should be in a larger building which would admit of some arrangement in sections.

THE MAUDSLEY LECTURESHIP.

THE Medico-Psychological Association has fixed the conditions for the Maudsley lectureship, founded by a bequest of the late Dr. Henry Maudsley. The lecturer will be elected by the council each year in the May preceding the year of the lecture, and will be a person who has made contributions of well recognized importance bearing on the knowledge of mind and its disorders and their prevention and treatment. The lecturer may be of any nationality and of either sex. He or she will be required to give two lectures,—the one scientific, dealing with mental disease or an ancillary science, and the other popular, dealing with the hygiene of mind—and will receive a suitable honorarium and a gold medal with ribbon.

BOVINE INFECTION IN CHILDREN.

IN an interesting report by Dr. J. Tertius Clarke, the Health Officer at Kinta in the Malay States, on *Phthisis, an Infectious Disease*, the occurrence of bovine tuberculosis in that part of the world is stated to be unknown in so far as any evidence of its presence in cattle is forthcoming. Tubercle of the lungs is very prevalent in the human subject of the many different races met with in the mining districts of Perak. No account is given of the disease as affecting children, nor is any mention made of glandular or bone infiltration in patients of any age. It is stated, with regard to the Chinese children who may have come under treatment, that milk is very little used by them as an article of diet; if it can be proved that in the absence of bovine disease in the country there is also no glandular or intestinal infection in children, such facts would provide strong support to the theory that the bovine form is the commonest originator of the malady.

THE wide interest shown in some of the topics now under discussion in our correspondence columns compels us to postpone the publication of numerous letters.

Medical Notes in Parliament.

National Insurance Bill, 1919.

INCOME LIMIT.

MAJOR ASTOR, in moving the second reading of the National Insurance Bill, on July 3rd, said that under the Acts as they stand at present all manual workers are required to be insured without regard to their rate of remuneration, but persons employed in non-manual labour are not insurable as employed contributors if their rate of remuneration exceeds £160 a year. In view of the change in money values, the bill proposed to substitute £250 for £160 as the limit for insurance of non-manual workers. Major Astor claimed that the effect of the measure would be to maintain as far as possible the *status quo*. Unless this bill were passed as from June 30th last, between half a million and a million of insured non-manual workers would be driven out of insurance and lose the advantage of all their contributions at different times. In selecting the figure of £250 instead of £160 as the limit for such insurance the Ministry were guided by the award of the Conciliation and Arbitration Board for Government employees. Had the Government estimated independently on the increased cost of living, they would probably have selected a higher figure. Employers had been in doubt whether or not to treat their employees who were insured before at a rate of remuneration covered by the old limit as still insured under the higher scale of wages. They were induced to carry on, and now it had become essential to pass a bill in order to regularize the situation. There was difficulty in defining the difference between a manual and a non-manual worker, and there were cases in which a man was sometimes a manual worker and at others a non-manual worker. Hence it was the more necessary to pass this small bill. There were a certain number of people who in 1914 were non-manual workers, taking a little over £160, whose incomes had not now gone up beyond £250. To that extent new people would be brought into insurance under this bill. So far as he could tell, that number was practically negligible. If he had to give a figure he would estimate it at something like twenty or thirty thousand, whereas if the bill was not passed about a million people would be affected. So far as could be ascertained the total number of people insured after the passing of this Act would, if anything, be rather less than it would have been according to the original intention of 1911. Some of his medical friends had doubts as to the need of passing this bill at this particular moment, but he had tried to explain to the deputation that the date of June 30th was crucial for insurance and the bill could not be postponed. During the war insurance doctors had received a war bonus. At the present moment and for some time past the department had been discussing with representatives of the medical profession the rates of remuneration for the future, and that raised the whole problem of the nature of the services to be rendered in return. He could not go into that matter then, but if this bill were not passed, a large number of medical men who dealt with insured persons would lose their patients. He had received deputations from medical men. Reference had been made particularly to the bringing into insurance of that very limited class of between twenty and thirty thousand persons to whom he had already referred. The Government did not want to bring them into insurance, but to exclude them was found impossible. Endeavour was made to frame a clause which would exempt them, but it could not be done. If an amendment were put down which would carry out this intention the Government would be prepared to accept it.

Dr. A. C. FARQUHARSON agreed as to the necessity of some such bill, the primary object of which was to prevent individual persons lapsing from insured benefits. But he found fault with the text of the bill, and objected to it on account of the effect it would produce. The text was so framed that by a stroke of the pen altering the figures from £160 to £250 a large number of entrants into insurance benefits were legalized by statute. He had not the slightest objection to everybody and anybody obtaining insurance benefits, but the position in which the parties now stood was standardized and fixed by statute. The doctors made definite binding contracts that they would attend people whose incomes did not exceed £160, and those contracts were passed in review at the end of each year. What the Government did now was to propose by a simple statute absolutely to destroy the sanctity of a contract existing between the Government through its agents, the Insurance Commissioners, and the medical profession. The medical profession did not desire to exclude people from medical insurance, but did say that where those services were part of something which the Government was bartering for something else, they must be considered. The profession had the right to stand upon the sanctity of a contract, and to say that it should not be penalized for the benefit of any section of the community. It was all very well for the Government to come down to the House with altruistic feelings towards insured persons, but the whole history of the relations of the Government to the medical profession since the Insurance Act came into force had been one series of incessant instances of betrayal and of depriving them of every penny that they could be deprived of. Major Astor had referred to the war bonus given to doctors and left the inference that they were getting rich upon it. (Major Astor dissented.) The bonuses were given only to the poorest of the poor of the profession and on condition that they tabulated their income from all sources. Was there another occupation in the whole country which had to submit to such ignominy? For years they had been allowed 2s. 6d. for notifying an infectious disease, and then in 1916 someone came along and said, "We will strike out this miserable 2s. 6d. for giving a professional opinion upon a professional document and sending it to an official, and we will make the figure 1s." This was an outrageous attitude to take up towards an honourable profession which deserved well of the country. In regard to the position of the panel practitioner, Dr Farquharson said the Government had contracted with him to do certain things under certain rules. This contract had been departed from. Take, again, the case of a non-panel practitioner—the middle class non-panel practitioner attending people for small fees. By this bill all non-manual workers, such as clerks, would be compelled to be insured. Major Astor had estimated the number as very few, but that estimate was the merest conjecture. The number might be very large or very small, but the Government was destroying a contract of service with the panel practitioners and destroying a great many practices of men working hard for a miserable livelihood. The Government ought to postpone this bill until the whole question of the unified medical services came up. Instead, it adopted this policy of pin-pricking and grinding down and sweating the profession. He appealed to the Government to modify the bill so as to postpone fresh entries into insurance. If this policy was continued the great majority of the members of the medical profession would inevitably drift into the ranks of trade unionism. He suggested that the whole measure should be redrafted. It would be enough if it secured that no person should lapse from insurance to which he was entitled.

Captain ORMSBY-GORE moved an amendment that the House should not proceed with the bill without guaranteeing acceptable medical service to all insured persons and without establishing the principle of free choice both by patient and medical practitioner. The National Insurance Commissioners and the committees set up under the original Act had not, he submitted, provided acceptable medical service to insured persons where those persons were either unwilling or unable to make use of the services of the panel doctors. In his own constituency a very considerable proportion of the working men had formed an association; they were all poor men—a good many of them Post Office servants—and they consulted the doctors who were not on the panel. Efforts had been made to get the doctors on the panels but had failed. In the circumstances it was the duty of the Insurance Commissioners, under Section 15, Subsection (3), to provide something in lieu of medical benefit under such arrangements as the panel system. The Act provided that the Insurance Committee might allow insured persons, whether individually or collectively, in lieu of receiving medical benefit under the arrangements made by the Committee, to make their own arrangements for receiving such treatment. What had happened? In the town of Stafford a few panel doctors had far more patients than they could pay attention to, and the remainder of the doctors got nothing from the Insurance Committee or the Insurance Fund. Still they were dealing with over 700 insured persons, and these had to pay twice over. It was not in any hostile spirit he moved his amendment, but simply because there had been a breakdown, and he thought that they should not extend the principle unless they were prepared to carry out the original intention of Parliament. He agreed that owing to the rise in wages something must be done; but the pay of the doctors ought to be considered, too. Prices had gone up to them as they had gone up to the insured persons. Their case should be investigated.

Captain ELLIOT, seconding the amendment, said, however, that he was not entirely in favour of it. Not all the

people who would come under this Act would be compelled to contribute. A certain number would be entitled to get the certificate of exemption. The main point he wished to make was that the insurance services just now, from the medical point of view, were not satisfactory. In these circumstances an extension of the scheme should not just now be carried out. There was a chance to remove the undoubted grievances of the people of the country who had been compelled to contribute towards medical benefits which were not satisfactory and did not carry out the original intention of the Act. Great services under the Insurance Act were still being given for charity as they were before. The services of consultants, surgeons, and others were thus being rendered. It was not fitting that services to the sick in this country should be so supplied.

Lieutenant Commander Kenworthy hoped that the amendment would not be pressed, for the class particularly hard hit at the present time was that of non-manual workers with low incomes. He was sure that members would support any motion the Minister of Health would bring forward to increase the fees chargeable to panel doctors; but let this bill go through first.

Sir Philip Magnus said there were many points in the amendment with which he agreed, but he did not think it ought to be carried at the present time. He believed that the Minister in charge would consider favourably in Committee certain amendments, some of which might be of a drastic character. He reminded the House that when the original bill was passed in 1911 there was a strong effort by the medical men to make the limit £104, and the £160 was carried only by the strength of the Government majority. He emphasized the fact that the minimum limit of income exempting any one from income tax still remained at £160. He thought there ought to be some close connexion between that limit and the limit for insurance.

Lieut.-Colonel Sir A. Warren, on behalf of the Approved Societies, hoped that the amendment would not be pressed. He emphasized the difference in the economic value of money. Mr. Tyson Williams spoke to the same effect. The bill should be given an opportunity of going into Committee, where it could be improved.

Major Astor, in reply, said that it was not believed that the bill would make any additional charge on the Exchequer. He appealed to Captain Ormsby-Gore not to press his amendment, as the new persons who would be brought in would have the right of claiming a certificate of exemption so that his point would be met. What Captain Ormsby-Gore had said about a certain number of insured persons in his constituency appeared to be a matter not of legislation but of administration. Dr. Addison would go very carefully into the question and see if anything could be done.

Captain Ormsby-Gore then withdrew his amendment, accepting the assurance given as to inquiry into the particular matter he had brought up; and the bill was read a second time, and referred to a Standing Committee.

Nurses' Registration Bill.

When debate on the Nurses' Registration Bill was resumed on report on July 4th, Major Nall moved the adjournment. He said that if the promoters of this bill (introduced by Major Barnett) would allow it to drop, the promoters of the opposing bill would be willing to withdraw their bill on the understanding that the Government would bring in a bill. He had received the authority of the chairman of the College of Nursing to make this statement. Mr. Hailwood seconded the amendment.

Major Barnett said that if it had not been for the time taken up by wrecking amendments and motions for adjournment it would have been possible to deal with all the real amendments promised in the Committee stage and to have passed the bill in the Commons with a good chance of some agreement being reached in another place. He recognized that in present circumstances it was useless to go on. The adjournment was afterwards agreed to.

The Demobilization of Medical Men.

Mr. Churchill, in a written answer to a question by Mr. Macquisten on July 8th, said that the demobilization of an individual medical officer was in the hands of the general officer commanding in charge concerned. The policy was to release first those who on account of age, length of service, personal hardship, public expediency, etc., were regarded as most deserving of consideration. Even then it was impossible to meet every claim, as it was still found necessary to retain certain officers possessed of special qualifications, and for whom it was impossible to find substitutes. Applications received by the War Office were given every consideration, and when the claims of either an individual medical officer or the application of any public body for the services of a particular officer came under any of the above categories every effort was made to obtain his release, but his claim had to be considered in conjunction with the claims of other officers serving in the same command at home or expeditionary force overseas. No temporary commissions had been granted in the Royal Army Medical Corps since the armistice. It was hoped that under the new contract a large number of recently qualified medical men would volunteer for service overseas, and thus enable those who had served longest to be released.

Welsh Board of Health.—Brigadier Sir Owen Thomas on July 8th asked whether it was proposed to give representation on the Welsh Board of Health to the Executive Committee of the Welsh National Memorial Association, to the North and South Wales Nursing Association, and to the Executives of the North and South Wales Soldiers' and Sailors' Disablement Committees. Major Astor replied that the Board was not yet complete, but section 5 of the Ministry of Health Act required the persons constituting the Board to be officers of the Ministry and this requirement excluded the possibility of adopting the principle suggested in the question. The important bodies referred to would probably be asked to suggest suitable names of persons for membership of the Consultative Council of the Ministry of Health in Wales. In reply to a further question, Major Astor said that the remuneration of the three members of the Welsh Insurance Commission who had been appointed members of the Welsh Board of Health was at the rate of £1,500, £1,200, and £1,000 per annum respectively and no change had been made in these rates on their transference. The whole time of the Commissioners was fully occupied with insurance work, except in so far as they undertook various forms of temporary war work. The question what further salaries, if any, were to be paid to members of the Board had not yet come up for decision.

Nursing Services in the Highlands.—Mr. Munro, Secretary for Scotland, in a written answer to a question by Sir Archibald Williamson, stated that the salaries paid to nurses within the area of the Highlands and Islands Medical Service Board were at the discretion of the District Nursing Association in whose employment they were, and at the present time there was no uniform standard of remuneration. The Board had, however, just passed a scheme under which it would be empowered to give grants to associations to enable the latter to pay more adequate salaries. This scheme, which was at present before the Treasury, would have the effect of increasing the nurses' remuneration by approximately 30 per cent. on the pre-war figures.

The Dogs' Protection Bill.—Sir John Butcher asked, on July 8th, whether the Government intended to take the administration of the Cruelty to Dogs Act, 1878, out of the hands of the Home Secretary and place them in those of the Minister of Health; if not, why was the conduct of the Dogs' Protection Bill on the occasion of the third reading taken out of the hands of the Home Secretary and placed in the hands of the Minister of Health? Mr. Bonar Law replied it was not proposed to make any change in the administration of the Act. The discussion of the bill raised the general question of its effect on medical research, and it was arranged that the Minister of Health should speak on behalf of the Government.

Scotland.

THE Scottish National Hospital at Bellahouston, Glasgow, founded by the Scottish Branch of the Red Cross Society in October, 1915, will be taken over by the Ministry of Pensions at an early date as an institution for the treatment of discharged disabled soldiers. The fully equipped orthopaedic department will be maintained in full use by the Ministry of Pensions.

SCOTTISH BOARD OF HEALTH.

Mr. J. W. Pratt, M.P. for Cathcart (Glasgow), who was one of the Lords Commissioners of the Treasury, has been appointed by the Secretary for Scotland to be Parliamentary Under-Secretary for Health in Scotland. Sir George McCrae, D.S.O., Vice-President of the Local Government Board for Scotland, has been appointed Chairman, and Sir James Leishman and Dr. J. C. McVail (Chairman and Deputy Chairman respectively of the National Insurance Commission, Scotland) have been appointed members of the Scottish Board of Health.

SCOTTISH CHAIRS.

Owing to the resignation of Mr. F. M. Caird, the Regius professorship of clinical surgery in the University of Edinburgh will become vacant on August 3rd. In the University of St. Andrews Dr. F. J. Charteris, Assistant Physician to the Western Infirmary, Glasgow, has been appointed Professor of Materia Medica in succession to Professor C. R. Marshall, who has been called to the corresponding chair in Aberdeen, and Mr. Lloyd Turton Price, Surgeon to the Dundee Royal Infirmary, has been appointed Lecturer in Clinical Surgery, in the vacancy caused by the resignation of Mr. David MacEwan.

POST-GRADUATE TEACHING IN EDINBURGH.

It will be remembered that on February 8th the JOURNAL (p. 170) furnished details of post-graduate courses in clinical medicine and clinical surgery on somewhat novel lines which were being prepared in Edinburgh more especially for the use of medical men who had graduated during the war and who had been doing military duties for the four years of its continuance. During the summer session which has just ended the first of these remodelled means of instruction has been going on; concurrent courses on clinical medicine and clinical surgery and allied subjects were given and agreed in detail exactly with the plan sketched in the JOURNAL. Each course was limited to thirty members, and there were only a few vacant places in either of them. Those attending were in the main representatives of the military forces, graduates of Canadian, Australian, and New Zealand universities, and graduates of the various Scottish universities; they included also medical officers of the American army who were graduates of the different medical schools in the United States. Towards the end of the courses (on the evening of Tuesday, June 24th) the members had the opportunity of meeting the teachers in a social way in the University Union; on this occasion the Chairman of the Executive Committee made reference to the aim of the instruction which had been arranged and given, and several of those who had attended expressed the benefit they had received and the pleasure and profit it had been to them to meet the representatives of the Edinburgh Medical School. During the vacation months of August and September only one course will be given, that dealing with obstetrics, gynaecology, and pediatrics (more especially in relation to child welfare). This course begins on Tuesday, August 5th, and will include the subjects specified already in the JOURNAL of February 8th and follow the lines there indicated. It will last for eight weeks. In October, again, there will be coincident courses on clinical medicine and clinical surgery. The place of Mr. Miles, who acted as interim honorary secretary, has now been taken by Dr. R. W. Johnstone, 10, Alva Street, the permanent honorary secretary.

England and Wales.

THE MEDICAL STAFFS OF LONDON MENTAL HOSPITALS.

AT the meeting of the London County Council on July 8th it was agreed to revise the scale of remuneration and the conditions of appointment of assistant medical officers at the larger mental hospitals (those with 2,000 patients or more). Recommendations are to be submitted at a later date as regards officers in the two smaller institutions. The first assistant medical officers are to receive inclusive salaries of £700; the second assistant officers, from £525 rising to a maximum of £600; the third and fourth, from £425 to £500; and the fifth and sixth, from £300 to £400. The war bonus and percentage additions are to apply as long as these are payable generally in the Council's service, and will have the effect of bringing up the total remuneration of the four grades respectively to £875, £680 to £755, £561 to £650, and £430 to £553. Favourable consideration is also to be given to applications made by the officers for seconding with a view to holding clinical posts at the Maudsley Hospital or taking post-graduate courses at other hospitals, and they are to have facilities for reasonable study leave with a view to obtaining a diploma in psychological medicine. In making appointments to positions in the medical service at the mental hospitals special consideration is to be given to those candidates who hold degrees in psychological medicine. Officers are also in future to be appointed to the London mental hospital service, and not necessarily to the service of one institution.

LONDON AMBULANCE SERVICE.

It was reported to the London County Council on July 8th that the Establishment and Fire Brigade Committees had considered a letter from the Metropolitan Counties Branch of the British Medical Association urging that instead of appointing a principal adminstrative assistant in the London ambulance service as proposed, an officer should be appointed possessing medical qualifications. The two committees also jointly received a deputation from the Branch, but after going carefully into the matter, both committees were unanimously of opinion that the post should be purely administrative, and that medical advice could be given by the Council's medical officer of health. It was decided to increase the administrative staff, which works under the chief officer of the Fire Brigade, by one senior assistant and three assistants of other classes.

India.

SHORTAGE OF OFFICERS, I.M.S.

THE shortage of officers in the Indian Medical Service is very great, and an addition of something like 150 will be necessary if the cadre is to be maintained. The deficiency is accounted for by various factors. During the war recruitment in England was greatly reduced, and at the same time the losses through casualties were increased. The new leave rules, the extension of the station hospital system, and development of medical research, are among other causes which affect the position.

PREVENTION OF INFLUENZA.

In view of a possible recrudescence of influenza the Government of India have forwarded to local governments and administrative bodies copies of a memorandum setting forth the opinions founded upon observations during the pandemic of last year, and medical literature indicating preventive measures which promise to give the best results. The memorandum, which has been prepared by the Sanitary Commissioner with the Government of India in consultation with the Director of Medical Services, is intended for circulation among medical officers and others concerned, and Government also consider it desirable that it should be translated into suitable vernacular and distributed as widely as possible to the public.

PUBLIC HEALTH ORGANIZATION.

The Government of India has announced that the conference of medical experts which assembled at Simla to consider the utilization of the allotment of 5 lakhs made by the Government of India for the initiation of a public health organization passed a number of resolutions and concluded its sittings on May 24th, 1919. Among the more important recommendations made by the conference was the establishment of a central public health board consisting of official and non-official members, with a view to the co-ordination of preventive and curative medicine and of research, and the creation of similar boards in the provinces. There should also be a mobile corps of epidemiological workers who would be maintained from the allotment. These workers would ordinarily be at the disposal of provincial governments, but might be concentrated at the orders of the Government of India in any area afflicted by a severe epidemic. Their functions would be the investigation of any particular epidemic, assistance in coping with it, and education of the people in the avoidance of disease. The conference also laid stress on certain kindred measures, such as the establishment of an epidemiological statistical bureau, the increase of the curative medical staff, the multiplication of dispensaries, and the further development of research facilities by the establishment of a well-equipped central institute.

MEDICAL EDUCATION IN MADRAS.

The Surgeon-General has, at the request of the Government of Madras, worked out a scheme for the establishment of a medical college at Vizagapatam. Plans and estimates for the rebuilding of the civil hospital there, at a cost of over five lakhs, have been approved, and a scheme of medical schools and continuation schools has been drawn up. The Government has accepted the proposals, but has recorded its opinion that the policy now forced upon it by the absence of hospitals of adequate size at various centres does not represent the ideal for medical education in the province. The Government holds that a single medical college will not permanently meet the needs of the Presidency of Madras.

A UNIVERSITY IN RANGOON.

The proposals have taken shape for the establishment of a university in Rangoon with which would be affiliated the Judhon College and the Government University College. At first instruction leading to degrees or diplomas in arts, science, and law, will be given, and arrangements are being made for the addition of other constituent colleges, the

object being to concentrate the work as much as possible. It is hoped that colleges for electrical engineering may be established and affiliated with the University of Rangoon in the near future.

Correspondence.

RADICAL CURE OF FEMORAL HERNIA BY THE INGUINAL ROUTE.

SIR,—The contribution by Mr. Percival Cole in the BRITISH MEDICAL JOURNAL of June 21st is timely, and may prevent a hurried operation for the radical cure of femoral hernia by some who are still of opinion that it is more easy to obtain a radical cure in this form of hernia by a simple procedure than in any other form of protrusion. Those of us who had experience before the attempt was made to close the canal from above could give many instances to prove the contrary.

There are a certain number of cases of femoral hernia which can be cured by excision of the sac and reduction of the ligatured neck into the abdomen, because the canal is narrow, and has not undergone any appreciable amount of dilatation from repeated descent of abdominal contents. There are many more which present themselves for radical cure, especially in hospital practice, which require additional help before there can be a reasonable expectation that the result will be satisfactory. It is not easy to say to whom in this country the idea occurred that the operation for femoral hernia would be more satisfactory if a barrier was placed at the upper end of the canal. Dr. T. E. Gordon[1] quotes Mr. W. H. Bennett as having said in 1893: "That the essential detail was the placing of a barrier across the upper part of the femoral canal." Tuffier[2] is said to have recommended in 1895 approach through the aponeurosis of the external oblique. R. H. Parry[3] read a paper at a meeting of the British Medical Association, and described cases in which he had operated by a plan similar to that of Lotheissen, the first of which had been performed four years before the date of his paper. Lotheissen described his method in the *Centralbl. für Chirurgie*, 1898.

Dr. Cantas[4] made researches to decide the question as to the best operation, and came to the conclusion that there were three things necessary in order to attain success: (1) Suppression of every trace of a peritoneal diverticulum by the application of a ligature to the highest possible level of the neck of the sac; (2) annihilation of the femoral ring by dragging down Poupart's ligament; (3) replacement of the septum crurale by a strong musculo-aponeurotic screen.

In 1899 the conviction that it would be best to close the upper end of the canal with some barrier of living material led me to perform an operation in which the strong aponeurosis of the external oblique was utilized. It was first described in 1901,[5] and a further communication was read before the Medical Society[6] in May, 1906, on which date I had performed the operation sixty-five times. I have done it many times since, and the results, so far as I know, have been uniformly successful. When opportunity permits I shall hope to give some details which prove a justification for this method of performing this operation. —I am, etc.,

London, W., June 30th. W. H. BATTLE.

SIR,—Mr. Joseph Cunning's criticism of my description of Lotheissen's operation is perfectly just. His letter emphasizes and makes clear an important step in the procedure. Cooper's ligament is, as Mr. Cunning rightly says, a firm dense white band which can and should be clearly demonstrated before the sutures are passed. Mr. Cunning is also correct in his parenthetic surmise as to the extent of my acquaintance with *Aids to Surgery*. Its popularity is well known and this particular instance supplies added proof of desert, in that reference to it would discover a method ignored in larger and more pretentious volumes.—I am, etc.,

London, W., June 30th. PERCIVAL P. COLE.

[1] T. E. Gordon, of Dublin, BRITISH MEDICAL JOURNAL, 1900, vol. i, p. 1338.
[2] Mentioned loc. cit.
[3] R. H. Parry, BRITISH MEDICAL JOURNAL, 1901, vol. ii, p. 1136.
[4] BRITISH MEDICAL JOURNAL, Epitome, March 10th, 1906.
[5] *Lancet*, 1901, vol. i, p. 302.
[6] Medical Society's *Transactions*, 1906, p. 343.

THE ETIOLOGY OF AORTIC REGURGITATION.

SIR,—The letter of Dr. Knyvett Gordon criticizing my reference to the connexion of scarlet fever with endocarditis affords me an opportunity of explaining a statement which perhaps was carelessly worded.

What I intended to indicate was that scarlet fever and a few other diseases have no specific action in leading to the development of an endocarditis which results in chronic valvular disease. That specific action is limited, I maintain, to rheumatism and its sister disease, chorea. Even syphilis does not directly produce endocarditis. Aortic valvular disease is the only form of chronic valvular disease associated with syphilis, and when due to syphilis is secondary to disease of the aorta.

If we exclude from consideration the causation of calcareous disease of the aortic valve, the only diseases which lead to chronic valvular disease may be said to be rheumatism, chorea, and syphilis. Although this is so, any disease which may be complicated by septic infections may present localized spots of inflammation in various parts of the heart, including the valves, and occasionally such infections may show more widely distributed disease in the form of early *malignant* endocarditis.

Dr. Gordon speaks of inflammation, in cases of scarlet fever, occurring in the interior of valves of the heart, microscopical sections of which showed the presence of micro-organisms. Dr. Gordon, I presume, does not intend to imply that the micro-organisms were the cause of the scarlet fever with which disease of a valve was associated. If the micro-organisms were not the cause of the scarlet fever then the endocarditis was due to a different cause, and obviously was not caused by the scarlet fever. The cause of the endocarditis would probably have acted equally well in many other diseases which would have admitted it to the circulation. I see nothing therefore in Dr. Knyvett Gordon's experience to controvert my statement that scarlet fever does not produce endocarditis in the sense in which I intended to refer to its influence on the heart.

Dr. Gordon also indicates that he could bring evidence from the clinical side of the question to support the view that scarlet fever produces endocarditis. If I have appeared to be over-bold on the pathological side I should be still bolder on the clinical. I have spent many months tracing cases in which cardiac murmurs had been heard in children, some years having elapsed since the children were first seen. My experience convinces me that murmurs which develop in acute diseases of children, other than rheumatism or chorea—and many of the murmurs in these also—have no connexion with endocarditis. If cardiac murmurs appear during an attack of scarlet fever I can confidently say that they are not due to endocarditis—at least, to a simple endocarditis which owes its existence to scarlet fever.—I am, etc.,

June 22nd. THEODORE FISHER.

SUDDEN DEATH UNDER AN ANAESTHETIC.

SIR,—Over thirty years' experience of the removal of "adenoids and tonsils" by every method and under most anaesthetics leads me to the opinion that the views of Mr. Waugh and Dr. A. G. Levy are the more correct and reasonable. The operation can be performed with equal safety with either chloroform or ether if properly administered to suitable patients. In children under 12 years of age chloroform pushed to the point of abolition of the conjunctival reflex, with proper previous control of the tongue, has in my experience of many thousands of cases been invariably successful. I am happy to be able to say that I have never had to endure the mental suffering described by my friend Mr. Tilley on account of a death during chloroform anaesthesia for either the guillotine operation or enucleation of tonsils. My hospital operations and most of my private cases in the last sixteen or seventeen years have been performed with the skilful assistance as anaesthetist of my friend and colleague Dr. Hugh R. Phillips. He has until recently always administered chloroform with oxygen, and we have never yet had any serious difficulty, and such rare troubles as occurred were of the slightest character. I think a great many of the fatalities with chloroform may have been due to "oxygen lack" and to neglect of the proper control of the patient's tongue from the very start of the anaesthesia. Writing

altogether from the operator's point of view, I should prefer chloroform in children up to 12 years old if skilfully and carefully given. Over that age the risk from chloroform becomes greater, and appears to be at its height between 15 and 20 years. If a patient's enlarged tonsils have been neglected until he, or especially she, is 15 years old they may well be let alone for a few years more or treated by methods that do not call for a general anaesthetic. Certainly chloroform should not be used alone. If an operation must be performed it would be better to use open ether or some modification of chloroform anaesthesia.

Dr. Phillips has lately, even in children under 12 years, been inducing the anaesthesia with chloroform and continuing with ether and oxygen pushed to deep anaesthesia, and this, so far, seems to be a very satisfactory method for enucleation. But the whole decision should be left to the anaesthetist. Even from the operator's point of view it is a good rule to have an anaesthetist in whom entire confidence can be placed, and to leave it to him after examining the patient to choose his own anaesthetic and modify it as he thinks best for the safety of the patient during the course of the operation. There is reason for the suggestion that some of the accidents recorded have been due to some extent to the operator overruling the anaesthetist not only in the choice but in the degree of administration of the anaesthetic. After all it is the anaesthetist who has to take most of the mental suffering and other consequences of a misadventure.

Although I accept Dr. Levy's view that enucleation can be performed equally well with full chloroform or open ether, I do not associate myself with the statement in his first paragraph that the death of Dr. Gabbett's patient "is the old story of an intermittent and insufficient administration of chloroform." I have had on several occasions the advantage of Dr. Gabbett's co-operation in throat and nose operations and I know him to be a highly skilful and most careful anaesthetist for whom such an administration as Dr. Levy describes would be an impossibility. In expressing for my own part the sympathy we all must feel for Dr. Gabbett in this misfortune it appears to me that the age of the patient and the condition discoverable only *post mortem* were the predisposing factors, and not the anaesthetic or the mode of administration.

I do not think Mr. Waugh himself would make the claim made for him by Dr. Felix Rood that the operation of enucleation of the tonsil was introduced by Mr. Waugh. It is one of the oldest operations in surgery, and was much in vogue for adults, at any rate in Dublin, when I was a student. I remember giving anaesthetics at the Richmond Hospital, Dublin, in the years 1885–86 for a house-surgeon who was quite an expert in removing tonsils with a dissecting forceps and a curved blunt-pointed scissors, much as they are done now. When Mr. (afterwards Sir Thornley) Stoker presented the hospital with some Mackenzie guillotines the old "knife and fork" operation went out of fashion there as in most other places, although many of the older laryngologists, including myself, have never laid it wholly aside. Without wishing to be hypercritical of Dr. Rood's assertion, I am unable to see any essential difference between Mr. Waugh's description of the operation in the last edition of Burghard's *System*, except in avoiding the use of the forefinger, and of Sir Henry Butlin's account of "shelling out the tonsil" in its predecessor. Although Mr. Waugh gives a most careful and detailed account of the preparation for and performance of this "Removal of the tonsil by dissection," under, be it noted, chloroform anaesthesia, he nowhere calls it enucleation or claims it as his own method or even as a new operation.—I am, etc.,

London, W., June 23rd. JAMES DONELAN.

SIR,—The discussion under this heading is most instructive. I wish to state my humble experience of the last eighteen months during which 550 tonsil enucleations were done in the institution in which I am a resident. In this series not one death occurred under an anaesthetic though all were done under chloroform anaesthesia, and 145 of these were enucleations "by dissection," the rest with the guillotine.

This interesting discussion naturally raises the no less important question of how many deaths or serious complications are directly or indirectly attributable to the operation.

In this series of cases two deaths have occurred some days later from complications (one acute mastoiditis with lateral sinus thrombosis and septicaemia, the other with septic bronchopneumonia); one child developed severe septic bronchopneumonia, but fortunately recovered; another who developed a laryngeal paralysis (diphtheria) five weeks later, also recovered; a few more were not brought to the hospital on a second visit, probably as the children (some at least) were too ill to be removed from their homes. With such results, and the possibility of death under the anaesthetic, be they due to inexperienced operators, anaesthetists, the anaesthetic itself, or the patients themselves in that they are of a lymphatic diathesis, I must say that tonsillectomy, though most often and commonly done as a minor operation, is attended with major risks, and too often in my experience with serious complications (about 1 per cent.). In other words, tonsillectomy is not a "perfect operation," as I have heard it stated by an eminent surgeon before a learned society, unless of course I have been less fortunate than others.

The question I would like to ask is: Is not tonsillectomy done far more frequently than is necessary, particularly in institutions; and do not the great risks to which a patient is exposed justify more palliative and prophylactic measures before resorting to operation?

It would be most interesting and instructive in this connexion to hear what serious complications, if any, occurred in the 18,000 tonsillectomies done by Mr. Waugh, and in Mr. Tilley's experience; also the opinions of physicians on the operation of tonsillectomy, and the results of palliative treatment, etc., adopted.—I am, etc.,

London, June 30th. T. H. GUNEWARDENA.

SIR,—It will be a pity if there does not emerge from the present discussion the clear teaching that a deep ether narcosis is the proper form of anaesthesia for cases of dissection of tonsils. For that reason I venture to write in support of the letters of Mr. Tilley and others, and to deprecate certain passages in the letters of Dr. Levy and Mr. Waugh. The latter's experience of 18,000 cases with one death must be regarded as entirely exceptional and in no way to be taken as an example. It is contradictory, not only to Mr. Tilley's stated experience, but contrary to the general experience of chloroform anaesthesia in all cases—not merely in cases of dissection of tonsils. Thus we are at liberty to congratulate Mr. Waugh most heartily on his performance, but at the same time to dissuade every administrator of anaesthetics from seeking to provide other surgeons with opportunities for emulating it.

To Dr. Levy we are all indebted for a physiological explanation of deaths in light chloroform narcosis which have always been the bugbear of the anaesthetist. The practical application of his experimental work should undoubtedly be to avoid chloroform for induction. He has not shown us how in practice the danger period of early narcosis can be passed over with safety. His recommendation is "to administer the vapour continuously and of sufficient strength to get the procedure expeditiously performed." That has been the endeavour of most of those who have used drop-bottle, Junker, or Vernon-Harcourt; yet fatalities have occurred. They will occur again if practitioners are encouraged by Dr. Levy to believe that danger can be eliminated from chloroform anaesthesia. Other physiologists, in particular Dr. Buckmaster, have shown other reasons also why the early stages of chloroform inhalation are dangerous. Dangerous they will remain, and the practical lesson of clinical experience for fifty years and more, as well as of physiologists' experiments, is that the only way to avoid all danger from chloroform is to avoid chloroform. This injunction may, however, be limited to the induction period, since it is admitted that the later fatalities—the over-dose cases—are probably avoidable.—I am, etc.,

London, July 1st. J. BLOMFIELD.

SIR,—I have been surprised to see no mention in this correspondence of the use of gas for enucleation of tonsils and removal of adenoids. I have given gas to school children for Mr. Courtenay Yorke of Liverpool in over 300 consecutive cases without a single case of post-operative

haemorrhage, and have seen no complication of any sort either during the operation or after. The enucleation is complete, the bleeding slight, and the patient recovers in half an hour, and is sent home. Considering the safety of gas and the almost complete immunity from untoward events, either at the time or subsequently, it seems to be the ideal anaesthetic for the operation.

A more prolonged anaesthesia with ether is occasionally required in adults if the tonsils are buried, adherent, and require removal by dissection, though frequently the same anaesthetic can be with advantage employed in adults.—I am, etc.,

C. RONEY SCHOFIELD, M.B., Ch.B., M.R.C.S., etc.,
July 2nd. Assistant Medical Officer, Southport Infirmary.

SIR,—Early contributions to this correspondence came from those whose full experience enabled them to speak with an authority which I expected to be conclusive; lack of unanimity, however, induces me to add to the subsequent correspondence.

In view of the frequency with which troubles (both local and remote) are associated with the diseased remains of imperfectly removed tonsils, it is difficult to see why the removal of tonsils by dissection, as originally advocated and practised by Waugh for upwards of at least a dozen years, should still find a dissentient voice, unless from a mistaken impression as to the risks involved. Only Waugh's method of complete removal (which includes the various modifications in technique) can ensure the certainty, accuracy, and precision demanded of modern surgery; the systematic performance of this simple and rapid operation for so many years in thousands of cases, under almost all conditions, by his colleagues, without (so far as I am aware) any of these tragic accidents, should surely establish its safety.

At the same time, during my investigations into the nature of surgical shock, I was forcibly struck by the marked fall of blood pressure associated with the deep chloroform anaesthesia; a fall which was accentuated to a dangerous degree by dragging on the tonsil at the moment of enucleation. (Arris and Gale Lecture, BRITISH MEDICAL JOURNAL, 1911.) Though no accidents occurred in my experience, I came early to the conclusion that this immunity was due to the skill of the individuals responsible rather than to the safety of the method; and that, if the procedure was to be adopted generally by the profession, the security of the patient would always depend almost entirely on the personality of the surgeon and anaesthetist. In other words, the margin of error was too small to justify the general adoption of this method by any but the most highly skilled, if chloroform was the anaesthetic employed.

For the last ten years, therefore, I have practised Waugh's operation under deep ether anaesthesia followed by a little chloroform in a Junker's inhaler, in some thousands of cases with no fatality, and real anxiety on only one occasion. At least $\frac{1}{100}$ gr. atropine has been given systematically (the smallest infants receiving a reduction in the dose), while open ether has been invariably the anaesthetic of choice at all ages.

With regard to the local use of cocaine and novocain, my investigations some ten years ago failed to show that this had the least effect in mitigating the reflexes arising from the necessary manipulations; these reflexes being too deep to be affected by superficial local measures.

In conclusion:

1. It must be admitted that partial removal of the tonsils is to be deprecated under all circumstances, owing to the evil after-effects, and the well known fact that, after such procedures, Waugh's operation is subsequently necessary in the vast majority of cases.

2. If chloroform is the anaesthetic employed, the patient's safety depends almost entirely on the personal factor.

3. If deep ether anaesthesia is employed, preceded by the hypodermic injection of atropine gr. $\frac{1}{100}$ or more, as advocated by many contributors to this correspondence, there is no more danger in tonsillectomy than in any other minor operation, provided (*a*) blood is not allowed to pool, (*b*) the operator has had the patience to familiarize himself with this simple operation, and (*c*) surgeon and anaesthetist are familiar with each other's methods, and work together as one person.—I am, etc.,

London, W., July 7th. H. TYRRELL GRAY.

REMUNERATION OF RURAL PANEL PRACTITIONERS.

SIR,—In the letter by the Secretary of the National Insurance Joint Committee (SUPPLEMENT, June 28th, p. 140) there is no reference to the remuneration of rural practitioners. His statement that "the increase in prices has been most marked as regards the necessities of life" surely cannot apply to rural practices; take, for instance, petrol, which is still more than three times the price of pre-war times; cars are double or more; drugs are enormously increased in price. The revenue from country work is so small that in a short time there will be no practitioners in purely rural districts, unless there is considerable increase in remuneration, especially if the income limit is raised to £250, for then nearly all the inhabitants will be eligible for the panel; not more than 3 or 4 per cent. excluded. The cost of travelling to see cases in thinly populated rural districts is not less than the revenue in insurance work.—I am, etc.,

Chulmleigh, N. Devon, July 1st. JOSEPH TUCKER.

SIR,—Having two panels, I am able to give some particulars on this subject. I have one small panel of 19, for which I am paid only on 17. Including mileage and drugs, etc., I only received £7 10s. 6d. last year. For this sum I have paid 89 visits, supplied 71 bottles of medicine, signed 79 cards, and travelled over 700 miles during the year, the number of sick persons being 10 out of 19, or about 51 per cent.

	£	s.	d.
Cost of travelling at 1s. per mile	35	0	0
Cost of 71 bottles of medicine at 6d. ...	1	15	6
Signing 79 sickness cards at 6d.	1	19	6
	38	15	0
Amount paid to me for one year	7	10	6
Out of pocket	30	4	6

On the other panel with 750 members I was paid only for 696. Payment for year £280, including mileage, and £31 bonus for increased cost of living = £311; 250 sick persons during the year equal about 34 per cent. Work done: 3,500 visits, 3,000 bottles of medicine, 3,000 cards signed.

	£	s.	d.
Cost of travelling at 1s. per mile (3,000 miles)...	175	0	0
Cost of 3,000 bottles of medicine at 6d. ...	75	0	0
3,000 cards signed at 6d....	75	0	0
	325	0	0
Amount received	310	0	0
Total loss	15	0	0

The loss from the two panels was £45 4s. 6d. Thus, after working hard for a whole year, I am £45 out of pocket. The contract system is wrong to start with; if, however, we are forced to do this work, we should be adequately remunerated, and not left to carry on at a loss. I reckon I see four national insurance patients for each private one. Nothing under £1 per year is just remuneration. I am not overstating the case; mileage and drugs are the cause of the deficiency.

If it were not for the fact that the Government would be sure to put a man here who would absorb part of the private work I would resign to-morrow. I wonder if my case is an isolated one.—I am, etc.,

June 17th. ENSLAVED.

INCREASED GRANTS TO INSURANCE PRACTITIONERS.

SIR,—The letter of Mr. Hackforth (Secretary of the National Insurance Joint Committee), published on p. 140 of the SUPPLEMENT of June 28th, contains at least one fallacy. It assumes that the medical man's gross receipt bears the same relation to his net income as the insured person's or the civil servant's gross receipt does to his net income. This is not the case.

My motor groom has no working expenses payable by himself. In this respect he is a typical insured person. Two-fifths of my gross income of last year were spent in paying my working expenses and his. The increase of capitation grant and mileage grant is not comparable to increase of a net income. And here let me interpolate that the proportion of the mileage allowance both before and after increase is inadequate for fairness.

The civil servant's working expenses are paid by the State, and are not reckoned part of his income. My working expenses so far as national insurance is concerned are, Mr. Hackforth and Major Astor may say, paid by the State, but they are reckoned in Mr. Hackforth's letter as part of my income. The cases are not parallel.

I do not contest the statement that the increase in prices has been most marked as regards the necessities of life. Perhaps I may be allowed to call bacon and margarine necessities. Bacon used to cost 1s. 4d. a pound; I get it now for half a crown. Margarine used to be 1s. a pound; it is now 1s. 4d. A motor car also is a necessity of life for a man of my work and physique. Such a car as used to cost £135 now costs £250; such a car as used to cost £285 now costs £495. I quote now from Mr. Hackforth's letter:

> It should be appreciated that the increase in prices has been most marked as regards the necessities of life, and that since *such* necessities absorb a larger proportion of a small income than of a larger income, the increased cost of living accordingly justifies a larger proportionate ratio of war bonus increase in the case of the former than in the case of the latter.

Mr. Hackforth may consider it unfair on my part to relate the word "such" (which I have italicized for the reader's convenience) to a car. He has not related the word at all. He keeps on safe ground when he writes generally of a small and a larger income, both of which may be small. I claim that the difference between a doctor's income and a miner's is not big enough to constitute petrol, lubricating oil, tyres, and the car itself less necessities of life than the steak on which a miner's whippet may have the first claim.—I am, etc.,

Duns, July 3rd. A. J. CAMPBELL.

MEDICAL APPOINTMENTS UNDER THE MINISTRY OF PENSIONS.

SIR,—In the JOURNAL of June 21st, p. 784, "Senex" says: "In some cases civil practitioners who, although over military age, . . . have given up their practices and every other source of professional income." I wonder whether this was purely for the country's sake? There are practices not worth ten guineas a week.

I maintain that, financially, the stay-at-home, whether of military age or over it, is much better off than the one who went away. The work done had to be shared by those who remained; the amount done depended on them. Old patients died or left the district, new ones came, and when the service man returned he was not known; the limpets got in.

All honour to the men of over military age who did their bit; but surely they all see that a practice must suffer, even in the country, by the absence of the principal.

However one looks at it one cannot help seeing that every one has had some hardship to bear, and only rightly so; but what of those who have given their all?—I am, etc.,

Bingham, Notts, June 25th. R. COPE.

SIR,—Those who took up national service work were either over or under military age. Those over were in many cases attracted to the work by the conditions of service, which meant fixed hours, no night work or bad debts. In other words, they were infinitely better off in every way than in general practice. Those under age who had made up their minds that they would not serve in the army unless forced to, seized upon these posts and fought tooth and nail to keep them, urging the fact of their being so occupied as their ground for resisting being called up. I can call several instances to mind in which this excuse availed. The fact of having this kind of work to do also enabled them to refuse the less delectable parts of general practice—for example, midwifery—as they were able to tell their patients without risk of offence that, owing to work of a national or military character, they had not time to undertake it.

Men now being demobilized find, in many instances, that their practices are yielding next to nothing, and, having given all, have an undoubted claim upon any Government posts. The men who stayed at home all had some reason (satisfactory to themselves) for doing so. They got what they wanted, and the time has now come for them to be made to feel that they have had their cake and cannot go on eating it. In the case of civilian medical practitioner appointments under the War Office, the latter has definitely given instructions to the commands to recognize that demobilized men can claim the appointments from non-service men who may be now holding them. In the case of Ministry of Pensions appointments a very weak policy has so far been followed. In fact, it would seem that the present non-service holders form a closed corporation.

On application for an appointment one is told that any drastic action would result in a great outcry. The only outcry the writer can foresee is the one that will undoubtedly be made by the country at large unless something is speedily done for the "demobbed" man.—I am, etc.,

June 22nd. "OUT OF WORK."

INSURANCE TERMS AND CONDITIONS.

SIR,—Reports are coming to hand of the group conferences to consider M. 25 of the British Medical Association and the memorandum of the Insurance Commissioners, and they present some interesting reading. To my mind they all make the fundamental mistake of assuming that any alterations in the medical services of the country must be based upon the existing Insurance Acts.

One of the Commissioners is reported as having said at one of the conferences that "the adequacy of the insurance medical service was a matter of national concern, and the Government was asking the profession to help in determining the lines of the best service that the country could afford to give." Note "the best service." Is there any one having experience of the working of the present Insurance Act who can say that any service based upon that Act can be the best that could be devised?

All that up to the present has emerged from the various conferences is, that the present system should be stretched a little here, patched up a little there, altered and tinkered with generally, and then fastened closely down upon the medical profession like a badly fitting shoe, with which nobody will be satisfied, and which will hamper and limit the freedom of the profession for all time. Surely something better can be devised!

The present contract system for medical benefit has not been a success, and never will be, however it is modified. The principle is wrong. It destroys the sympathetic relationship which ought to exist between doctor and patient. Every doctor knows what I mean, and every insured person knows it as well. As for it having secured an improvement in the health of the nation as a whole I do not for a moment believe it. I need not enlarge on this, though it would be quite easy to do so if required.

In Huddersfield this matter has been considered from the point of view of the health of the nation as a whole, or, in the words of the Commission, to help "in determining the lines of the best service that the country could afford to give," and we think that the following proposals would secure that result. Any alterations of the health services of the country should secure:

1. An efficient public health service, which would provide adequate sanitary, housing, and food supervision. (This exists at present to some extent but could be improved.)
2. An efficient nursing service with an adequate supply of midwives.
3. An efficient service of clinical and pathological laboratories.
4. Residential institutions for acute medical and surgical cases.
5. An efficient service for the poor.
6. A system of referees for insured persons.
7. That the present contract medical service should be abolished, and patients allowed to make their own arrangements as before the Act.
8. That the present arrangements for securing sickness and maternity benefits might be continued, with possibly a small contribution for the upkeep of the auxiliary services.

This is the outline of the system suggested. It would free the medical profession, and bring out the best that is in it. It would free the insured population, would develop their self-respect and self-reliance, and would save us from becoming a nation of "medicine drinkers," as at present we are fast becoming. It would also further simplify the present procedure enormously, and do away with all the proposed irritating and perplexing restrictions suggested in M. 25.

Now is the time for the medical profession to assert itself. There will never be such another opportunity. If the present proposals take shape the profession will be bound for all time, and bound in every direction, and this can only result in the deterioration of the health of the nation.—I am, etc.,

Huddersfield, June 29th. R. H. RIGBY.

SIR,—I have read document M. 25 several times, I have heard it discussed at two meetings of the Surrey Panel Committee, and at the meeting at Essex Hall held under the auspices of the London Panel Committee. At this last meeting we heard M. 25 gently and persuasively expounded to us by Dr. Cowie; and Dr. Brackenbury was also present to explain that, on several important points, M. 25 did not mean what it said.

But after all M. 25 has to be judged by what it says, and not by what Dr. Brackenbury or its other authors say it was meant to say. And if the scheme promulgated in M. 25 were carried out, there would in a few years be a State medical service for nearly all sections of the community; private practice would almost disappear, and doctors would become civil servants under the control of the Ministry of Health.

This point was put before the above meeting, and all that the apologists for M. 25 had to say was, that it was not a "whole-time salaried service," which is obvious, but does not alter the fact that M. 25 is a scheme for a complete State medical service, and the important question is whether the medical profession is prepared to accept such a position for itself and its successors.

I have heard it said that as a class the British general practitioners have not their equal anywhere in the world; that being so, why bring them under the blighting influence of State control?

There are, we know, some men who are in favour of bringing the medical profession under State control, and these men seem at the present moment to have control of the machinery of the British Medical Association.

I would suggest that, before further mischief is done, a postal vote of the whole medical profession in England, Scotland and Wales (Ireland, I think, does not come under the Insurance Act), should be taken on this question:

Are you in favour of a State medical service as proposed in M. 25?
This service would in a few years bring almost the whole of the medical profession under State control.
Please answer Yes or No.

So important is this question that I would invite the Presidents of the Royal Colleges of Physicians and Surgeons to act with the President of the British Medical Association as scrutineers.

So great is the change involved and so disastrous would it be to the medical service of the country that, in my opinion, it should not be made unless there were a two-thirds majority in favour of the change.

May I beg Dr. Hodgson of Crewe to amplify his letter of June 7th, and give us the reasons of his disagreement with M. 25.—I am, etc.,

Epsom, July 5th. E. C. DANIEL.

SHORTAGE OF DOCTORS.

SIR,—I, like the majority of medical officers while serving temporarily in the army or navy, heard on all sides about the great shortage and urgent need for doctors in civilian work.

But on being demobilized, I find to my surprise that (I am only speaking for my own town) there is no shortage of doctors at all—on the contrary there is an increase, and yet there are large numbers of medical officers still being retained with the troops, both at home and abroad. Apart from this, there are also those who can never return, having given up their lives for their country, but whose absence should still further increase this shortage. I understand that I am by no means alone in this experience, and that doctors who have served are now finding out on their return that, with only the nucleus of their old practices left, they have to face the opposition of new-comers, who have already comfortably established themselves in the immediate neighbourhood.

Where have these "arrivals" come from? And why have they chosen to start in such places? Also why, if there is or was this shortage, did not they go to those places where there was a legitimate opening owing to the death or retirement of the previous holder? Perhaps some of the demobilized medical officers will give their experiences.

In the meantime I will only sign myself—Yours, etc.,

June 27th. PUZZLED.

THE NEW R.A.M.C. CONTRACT.

SIR,—The War Office announces that temporary R.A.M.C. officers will, after August 4th, receive consolidated pay of £550 a year, and no other allowances but rations, and must sign on for one year, or until their services are no longer required. What I and my colleagues at this hospital want to know is the feeling of the other temporarily commissioned officers now serving, and whether the British Medical Association—of which we are members—think it a fair peace-time contract, and if they intend to take any action in the matter.

I would point out that in addition to the loss of income of £20 16s. there is the additional income tax to be paid on £52; the loss of children's allowance, and the upkeep of uniform. Why should our pay be reduced in these times when every one else is clamouring for increase and getting it?

Further, how can a contract be considered fair that binds one party for a year and allows the other party to terminate it at a day's notice? If our circumstances alter, such as by the acceptance of an appointment, how is one to get out of the army? Would a court of law uphold such a contract?

How is the older man to keep a wife and educate his children on this sum, or find the alternative civil appointment to enable him to do so? And how is the newly-qualified man to have any incentive to work or even know the value of money? The man who served for years is put on the same footing as the newly qualified, and the pay for work at home and abroad is the same.—I am, etc.,

July 6th. WAITING.

*** On the point of the children's allowance the Director-General A.M.S., in the statement printed at p. 46, says that officers will continue to draw this for the present.

HOSPITAL RECONSTRUCTION.

SIR,—There has been considerable correspondence in the medical and lay press as to the need for increased hospital accommodation, especially of the cottage hospital type. The difficulty in establishing these institutions is not so much the cost of building and equipping, as the fear that exists that they will be a continued and increasing drain upon the charitable public. For this reason it is important to consider the question of maintenance; there is apparently a general agreement that this should be as little as possible dependent on charity.

Take the case of an auxiliary hospital with twenty beds serving a population of ten thousand. One ward of five beds would be set aside for maternity cases. The upkeep of these beds might, under the terms of the Maternity and Child Welfare Act of last year, be provided, for the greater part, by the local authority; in so far as it might not be, the cost would be met by the patients occupying them, so that this ward, at any rate, would in no way be dependent on charity.

Another section of the hospital would consist of separate private beds for patients willing to pay such fees as would not only cover the actual cost of their maintenance, but would allow a certain profit to the institution. The number of these beds would vary with the character of the population, perhaps five out of twenty. This would be no charge on charity.

There would remain ten ordinary hospital beds. Some of the patients occupying these beds might be able and willing to pay the necessary fees, but the majority would probably not be willing, or if willing, would not themselves be able to pay. As yet we cannot look for these payments from the National Insurance Commission, approved societies, or local authorities, although the latter, under Section 131 of the Public Health Act, 1875, have the power to make them; but we may quite fairly point out to the public that the time cannot be very far distant when one or other of those authorities will be called upon to support these hospitals.

The most business-like system is to pay for each patient admitted the actual amount of his cost to the institution. To do this, it would be much better if the public, different bodies of workers, and other groups of persons, instead of paying hospitals indefinite sums, for which they expect an indefinite amount of treatment, would each form their own hospital fund, out of which they would pay for any patient that they sent to hospital the whole of the sum required. This would be a more businesslike arrangement, more fair and satisfactory for all concerned. Those using the hospital would feel a greater sense of independence. There would be no differentiation between the patients, each one of whom would bear, directly or indirectly, his fair share of the expenses of the hospital. Contributors would feel a more direct interest in the management of the institution, and would probably appreciate more fully the benefits that they received. If each society or group of persons had, as suggested, its own hospital fund, it would be able to pay for its own patients as occasion arose. It would not be bound to support any particular hospital. Payment would be made, not only for in-patients, but for such out-patients as there might be.

If these hospitals are used, as it is suggested they should be, for various public services, school clinics, maternity and child welfare centres, and so on, they would derive from these a certain income.

As to the payment of members of the medical staff—all insured persons, and others for whose treatment they contract, would be treated by them in hospital without any further fee. It must here be noted that there is a very real probability of the dependants of insured persons before long being granted medical and sickness benefit. For patients in the maternity ward, unless other arrangements are made, medical men, when called in by the midwife in charge, would receive the same fees as if the patients were in their own homes. For the patients of the public services the doctors would receive an agreed payment, but for all others they would make their own arrangements with each patient.—I am, etc.,

Bradford-on-Avon, July 4th. CHAS. E. S. FLEMMING.

A TUBERCULOSIS SERVICE.

SIR,—The financial side of Dr. Halliday Sutherland's letter on a tuberculosis service is probably one of the reasons for suggesting a separate tuberculosis service. Men who have specialized in tuberculosis see tuberculosis appointments going the way of all recent additions to the public health services—becoming assistants to the M.O.H. at salaries relatively few of which reach £500 and still fewer surpass it. School medical appointments went the same way. Maternity and child welfare never had an existence except as assistants. Oculists are being roped in similarly and venereal disease assistants are beginning to appear.

The result is that the number of junior appointments is increasing out of all proportion to the senior appointments, making the prospects of the service very poor for those who enter it even if one omits the number of senior appointments filled "locally."

In the BRITISH MEDICAL JOURNAL of May 24th (selected at random) twenty-one assistants are advertised for at salaries ranging from £350 to £500, and special experience in tuberculosis, eye-work, children's diseases, venereal diseases, are among the things asked for. In some an age limit is stated, definitely placing them as junior appointments. One county asks for a batch of six, one to have ophthalmic and another venereal disease experience. Six responsible better-paid appointments, from £600 to £850, are advertised—three M.O.H.s, two tuberculosis officers, and one school medical officer.

Tuberculosis officers are not yet completely submerged; the school medical officer advertisement is a rarity. The experience of the mental services is being repeated.—I am, etc.,

June 18th. M.O.H.

INFECTIVE CATARRHS—SO-CALLED COLDS.

SIR,—I entirely agree with Drs. Spriggs and Killick Millard (June 14th, pp. 751–2). I am convinced that until the general public realize that the "common cold" is an infective disease, due to definite organisms, and is, as a rule, only contracted by those frequenting crowded public buildings, conveyances, or stuffy rooms, we shall continue to suffer from these so often dangerous and fatal infections, due to the inhalation of infected atmosphere. I believe that not only are the common respiratory catarrhal infections due to specific micro-organisms, but that the so-called liver chill and stomach chill are due to the same organisms, causing an acute catarrh of the mucous membranes of the stomach and intestines. It is the common experience of the general practitioner to have some members of a family suffering from a "common cold" and others from "stomach chills," due, in my opinion, to the same organism. The fact that these infections are practically unknown in sanatoriums, where there is abundant ventilation and fresh air, and that in the recent influenza epidemic those sufferers who were shut up in warm, stuffy rooms suffered a higher mortality than those in hospital wards with an abundant supply of fresh air, is a conclusive proof that the common belief in the "cold" or "chill" theory is not only a mistake but actually harmful. What, then, is the remedy?

1. To educate the public, by the adoption of a suitable name for these conditions, to the fact that the cause of these infections is not "cold" or "chill," but warm, stuffy, infected atmosphere, due to lack of proper ventilation.

2. Bacteriological research with a view to discovering the causative organisms.

3. The intelligent use of a protective vaccine in cases likely to run the risk of infection, and a curative vaccine given early in infected cases.

Last autumn I inoculated over one hundred of my private patients with protective doses of a mixed vaccine, prepared from the *Pneumococcus*, *Micrococcus catarrhalis*, *Bacillus pneumoniae* (Friedländer), *Bacillus influenzae*, *Bacillus septus*, *Staphylococcus*, and *Streptococcus*, and only three of these developed influenza, and all in a mild form. My own experience is that the primary infection is usually the *Pneumococcus* or *Micrococcus catarrhalis*. With regard to the proper name to adopt for this class of case, with a view to the education of the public, I agree with Drs. Spriggs and Killick Millard that "infective catarrh" would be as good a designation as any other.—I am, etc.,

Woking, June 24th. R. THORNE THORNE.

SIR,—No one is likely to quarrel with the sensible views expressed by Dr. Spriggs and Dr. Millard in your issue of June 14th. But is not the mere change of name, which they advocate with so much stress, likely to be a slow way of achieving what they want? I imagine that doctors have been teaching their patients for a generation at least that "colds" are infectious diseases. Yet this has not availed to upset the crooked convention by which the wise man who takes himself (and his cold) to bed for two or three days is accounted a poor-spirited creature; while the streaming, snuffling distributor of poisons who goes about his business notwithstanding is taught to regard himself as in some sort a hero for perpetrating what is an offence against society.

This state of affairs must be laid at our door, for, in spite of what we have done, the public does not appreciate the formidable nature of a malady which can claim the parentage of diseases like pneumonias of different sorts, bronchitis, "tonsils and adenoids," otitis media, and sinus infections. The common "cold" can hardly be made a notifiable disease, though it deserves that distinction a good deal better than mumps or chicken-pox; but the influence of our profession should be capable of creating a canon of social life by which the possession of an acute cold absolves its possessor from social and business obligations without imputation; with the corollary that one so afflicted must keep himself to himself during the acute phase of his illness, both within his family circle and without it. This may sound impracticable at first hearing, but such an embargo on the wholesale dissemination of the disease might well be expected to reduce the incidence of it to manageable proportions.

I am not blind to the practical difficulties of deciding what degree of acuteness in a "cold" should warrant the ostracism of its possessor, though most of us know pretty well when we are in for a bad cold and when we are not. At all events, one may expect a general agreement with the view of your earlier correspondents, that the Medical Research Committee could not find a more deserving field of investigation, with a view to providing data for such

decisions, among other things. But it may be doubted whether it is necessary to wait for preciser knowledge than we have before attempting some organized "reconstruction" of the public attitude towards the common cold; and I should say that nothing but good could come of a memorandum addressed by, say, the Presidents of the Royal Colleges, to the lay press, giving the admitted facts and calling attention to the economic and other advantages of voluntary isolation. No doubt there would be a disdainful howl from large employers of labour; but they would learn in time that the steps which would be necessary to prevent malingering on this score were worth the money spent upon them.—I am, etc.,

London, W., July 7th. W. P. S. BRANSON.

PROFESSIONAL CONFIDENCE.

SIR,—I feel that the medical profession cannot rest satisfied with the pronouncement of the Council of the Medical Defence Union in respect to the case reported in the JOURNAL of July 5th.

The fact that there are two patients involved in the case has been entirely overlooked.

The duty of a doctor extends to the child no less than to the mother, and if, as in this case, the child is not forthcoming it is his duty to seek for it. And in the event of it not being found, to call on the police for assistance in the matter.

That he is at liberty to "pass by on the other side," which seems to be the considered judgement of the Medical Defence Union, must shock the moral sense of both the profession and the public. Neither can it be claimed that anyone by obtaining the professional assistance of a medical man has any ethical right to involve him in guilty knowledge and expect to do so with immunity.—I am, etc.,

Lincoln, July 5th. H. W. VAUGHAN.

SIR,—I am indebted to your courtesy in giving me an opportunity of seeing the letter which you have received from Dr. Vaughan, and which will appear in this week's JOURNAL. Dr. Vaughan is wrong in thinking that the Council of the Medical Defence Union has overlooked anything in the case referred to in my letter in the JOURNAL of July 5th. He states as a fact that there were two patients involved in the case. With all deference to him, such is not the fact. The Council fully recognizes the duty which a medical practitioner owes to any patient he may be in attendance upon, but it maintains that this duty must not be subordinated to the interests of a person whom he has never seen and of whose existence he has no certain knowledge.

It perhaps not infrequently happens that where an unmarried woman has given birth to a child, the friends, in order to avoid a social scandal, remove the child immediately after birth, and place it in good and safe hands for custody, before the arrival of a medical man. In such a case, is the medical man who may be called in to attend the mother to be expected, because the baby is not in evidence, to inform the police that the woman has had an illegitimate child, and may possibly be a murderess?

The Council contends that in the circumstances described in my former letter it was not the duty of the doctor to communicate with the police. Unless patients can feel at liberty to confide in members of the medical profession with full assurance that their affairs will be as jealously guarded as disclosures to a priest at confession, "the moral sense of both the profession and the public" would receive a shock even greater than that which Dr. Vaughan fears will result from the failure of the doctor in this case to act voluntarily as a police agent.—I am, etc.,

JOHN TWEEDY, President.

Medical Defence Union, 4, Trafalgar Square, W.C.2, July 9th.

TEXTBOOKS OF PHYSIOLOGY.

SIR,—I desire to emphasize your comment in to-day's BRITISH MEDICAL JOURNAL, in the review of textbooks of physiology, that "there is room for a book which will expound the principles of physiology underlining the essential facts without deteriorating into a cram book." I am looking for such a book.—I am, etc.,

June 28th. GENERAL PRACTITIONER.

Obituary.

E. G. FEARNSIDES, M.A., M.D., F.R.C.P.,

Major R.A.F., Director of the Golders Green Home of Recovery (Ministry of Pensions).

EDWARD GREAVES FEARNSIDES, who met his death in a boating accident near Holyhead on June 26th, was born at Horbury, Yorkshire, in 1883. He was educated at Dewsbury, became a senior scholar of Trinity Hall, Cambridge, and obtained a first class in both parts of the Natural Science Tripos, taking physiology as his chief subject. In 1906 he entered the London Hospital with a high academic reputation, and obtained first a university entrance scholarship and later one in medicine.

After holding all the usual appointments he became medical registrar, and filled this post for the unusually long period of four years. During this time he took part in a series of researches on syphilis of the nervous system in conjunction with Drs. Fildes, McIntosh, and Head.

He was appointed assistant physician to the Hospital for Paralysis and Epilepsy, Maida Vale, and threw himself into this work with his accustomed energy and devotion; during the earlier part of the war there was no duty he would not assume to help the hospital to carry out its responsibilities towards its military and civilian patients.

In August, 1916, he obtained a commission in the R.A.M.C. and was sent to Rouen, where he worked for six months; but in the early part of 1917 he returned to be attached to the Springfield Military Hospital, which was devoted to the treatment of functional nervous disorders. When the Home of Recovery was established at Golders Green, in connexion with the Ministry of Pensions, Fearnsides was chosen to direct it. This was one of the happiest periods of his life. Here he could entertain his friends, and he made the hospital a rallying point for those who were interested in the scientific problems of neurology or the treatment of functional neuroses. Finally, in September, 1918, when the Home of Recovery was taken over by the Royal Air Force, he received the rank of major in that force and continued to work at Golders Green until his death.

He took the degree of M.D.Camb. in 1914, and was elected a Fellow of the Royal College of Physicians the next year.

Throughout the whole of his career, whether in Cambridge or in London, his most striking characteristic was an untiring devotion to his work. His mind was acquisitive rather than original; but, in spite of the wide range of his scientific interests, his knowledge was astonishingly accurate. The review he gave in *Brain* (vol. xl, 1918) of the innervation of the bladder and urethra was a remarkable summary of our knowledge on the subject. Throughout the whole of the work on syphilis of the nervous system he acted as liaison between the laboratory and the wards; every patient was known to him personally, and it was he who furnished the final protocol. He had a genius for order and thoroughness; no one was a better critic of the success or failure of an attempt to present some difficult subject. He read widely in French and German scientific literature, and was responsible for a large number of the neurological abstracts in the *Medical Supplement* to the Review of the Foreign Press, compiled by the Medical Research Committee, which had so great a success during the war. But his interests extended beyond medicine; a keen geologist, he made many excursions in the company of his brother, the Professor in the University of Sheffield, and he published with Dr. Shipley a paper on the metazoan parasites.

He was beloved and trusted by his patients, both in hospital and private practice, and he filled many an awkward administrative gap by his genial efficiency. Unfortunately he did not live to reap the reward of that self-sacrificing devotion to both the science and art of medicine, but he had already made a place for himself in neurology, which cannot be filled now he is dead.

HENRY HEAD.

RIGHT HON. SIR WILLIAM MACGREGOR, P.C., G.C.M.G., C.B., M.D., LL.D.

SIR WILLIAM MACGREGOR, rightly described as "a great colonial governor," died in a nursing home at Aberdeen on July 3rd. The son of an Aberdeenshire farmer he was

born in 1847, and was educated at Aberdeen and Glasgow. He graduated M.B. in 1872, and M.D. in 1874 at Aberdeen. In 1872 he took the diplomas of L.R.C.P.Edin. and L.F.P.S.Glasg., and obtained the Fellowship of the latter body in 1908. He served for a time as resident surgeon and physician in the Glasgow Royal Infirmary, and resident medical officer in the Royal Lunatic Asylum, Aberdeen.

His colonial career began in 1873, when he was appointed assistant Government medical officer at Seychelles Islands. In 1874 he went to Mauritius as surgeon to the Civil Hospital, Port Louis, and in 1875 he became chief medical officer in Fiji. He was receiver-general and administrator of the Government, and for a time he acted as High Commissioner and Consul-General for the Western Pacific. In 1888 he went as administrator to British New Guinea, Queen Victoria's sovereignty of which he declared on September 4th. In 1895 he was promoted to be Lieutenant-Governor of the colony. So great was his success in that office that he was described by the Minister of Defence in a debate in the Australian Senate as standing "head and shoulders above all others who had administered the affairs of New Guinea." In 1899 he was appointed Governor of Lagos, a post which he continued to hold till 1904, when he was transferred to Newfoundland. There he remained till 1909, when he succeeded Lord Chelmsford as Governor of Queensland. He represented the West African colonies and protectorates at the coronation of King Edward VII in 1902. He retired in 1914.

Wherever Sir William MacGregor served as a pro-consul of the British empire he was universally acknowledged to have been eminently successful as an administrator. He was a man of versatile mind, and retained his interest in medicine. In 1892 he accompanied Sir Ronald Ross's expedition to Ismailia to investigate malaria. He was a Fellow of the Geographical Societies of England, Scotland, and Berlin, and was awarded the Founder's Medal of the English Society, and was a member of the Italian Anthropological Society. He presented valuable collections illustrating the life of the natives of West Africa, New Guinea, Newfoundland, and Labrador to the museum of the University of Aberdeen. In 1910 he was awarded the Mary Kingsley medal. He was an accomplished linguist, and in an opening lecture delivered at the London School of Tropical Medicine he surprised the audience by the number and felicity of his quotations from Dante, Homer, and other classics. He was a man of great personal courage and powerful frame, although he adopted a colonial career in the belief that it was necessary for the preservation of his health. He was awarded the Albert Medal of Queen Victoria and the Clarke Gold Medal by the Australian Government for saving life at sea. He was also a recipient of the Watson Medal in 1872.

Many honours were bestowed on him. He was created K.C.M.G. in 1889, G.C.M.G. in 1907, and C.B. in 1897. He became a Privy Councillor in 1914. Cambridge conferred on him its D.Sc. in 1895; in the same year Aberdeen made him an honorary LL.D., and a like distinction was bestowed upon him by Edinburgh in 1902, and afterwards by the University of Queensland, of which he was the first Chancellor.

Sir William MacGregor was a man of whom the medical profession may justly be proud. He was a fine example of the Scotsmen who have done such good service in the expansion and administration of the empire.

FRANK NICHOLSON, M.D., C.B.E.,

Senior Physician, Hull Royal Infirmary.

ON June 19th the medical profession of East Yorkshire and North Lincolnshire suffered a great loss in the death of Dr. Frank Nicholson, at his home at Tickton Grange, Beverley.

It was only a few months ago that he began to suffer from cardiac irregularity and dyspnoea, though with characteristic energy he continued to attend to his duties as usual until Easter, when he was reluctantly compelled to take to his bed. Even then he would not admit that his work was done, and on days when he suffered less distress he spoke hopefully of taking up his practice again after a short rest.

As a student of St. Thomas's Hospital he had a brilliant career, and was awarded the Mead medal in medicine and the Cheselden medal in surgery. In the examination for M.B. at the University of London in 1878 he won the Gold Medal in medicine, first class honours in forensic medicine, and honours in obstetric medicine; in the M.D. examination he distinguished himself further by winning the Gold Medal.

He settled in Hull in 1878, his only backing being his record as a student, and a year later, after a stiff fight, was appointed honorary physician to the Hull Royal Infirmary. From this time success came steadily.

Though he did not contribute much to the scientific journals his diagnostic skill and clarity of thought won him a great reputation as a consultant.

Dr. Nicholson had few interests outside his work, which remained his incessant passion to the end; however numerous the calls on his time he never allowed the demands of his private practice to interfere with the regular performance of his duties as physician to the infirmary. He was a jealous guardian of what he regarded as the great privileges of this position, and the efficient administration of the hospital was ever a subject very near his heart.

As a clinical teacher Dr. Nicholson was brilliant, and the post of his house-physician was much sought after. He spoke with the authority of a wide and mature experience, and though always eager to apply the latest methods of diagnosis and treatment he reserved his judgement until they had been thoroughly tested at his own hands. If in his opinion an "innovation" failed he poured unmeasured scorn on its adherents. He had the intolerance of a strong man who does not fear to voice his opinions.

During the war Dr. Nicholson was physician to the Hull Voluntary Aid Detachment Hospital and the Brooklands Hospital for Officers. This work was recognized by the award of the C.B.E. at the beginning of this year.

He had held the office of president of the East Yorks and North Lincolnshire Branch of the British Medical Association, and at the time of his death was a member of the managing committee and senior physician to the Hull Royal Infirmary and a Justice of the Peace for Hull.

Dr. Nicholson was a widower, and leaves a son and two daughters.

R. D. PUREFOY, M.D., LL.D.(HON.),

One-time Master of the Rotunda Hospital, Dublin.

DR. RICHARD DANCER PUREFOY died at his residence in Dublin on June 27th. He was a son of the late Dr. Thomas Purefoy of Lucan, and was born on August 4th, 1847. He was educated at Bective College and Raphoe Royal School, and entered the Dublin University, where he obtained the licences in medicine and surgery in 1871, and graduated B.A. and M.B. with honours and a moderatorship in natural science in 1872. In 1875 he took the licence of the Royal College of Surgeons, and the degree of M.D. in 1892. He was a member and past President of the Royal Irish Academy of Medicine. At the bicentenary of the Medical School the University of Dublin conferred on him the honorary degree of LL.D. He was a Fellow and member of the Council of the Royal College of Surgeons and president 1912 to 1914, and a member of the Royal Dublin Society.

Dr. Purefoy was for two years house-surgeon at St. Mark's Ophthalmic Hospital and for three years assistant master of the Coombe Lying-in Hospital. He was then appointed assistant master at the Rotunda Hospital. In 1879 he was appointed lecturer in materia medica to the Peter Street School of Medicine. He was obstetric surgeon to the Adelaide Hospital for twenty-one years, and acted as examiner in midwifery and gynaecology in the University of Dublin. From 1896 to 1903 he was master of the Rotunda Hospital. While there he threw himself heart and soul into the clearing of the hospital debt by organizing a big bazaar. On the termination of his mastership he was unanimously elected a governor of the hospital. And to-day a bronze bust by Oliver Shepherd, presented to him by the nursing staff, stands in the entrance hall. Dr. Purefoy was an old member of the Grand Master's Lodge and a member of the Friendly Brothers' Club. Last December he was elected president of the Catch Club.

He was a man of deep sympathy, never sparing himself, giving the greatest care and kindly attention to the poorest of his patients. His death will be felt as a great loss not only among his colleagues but also among all ranks in Dublin.

The Services.

R.A.M.C.

WAR BONUS IN INDIA AND MESOPOTAMIA.

CORRESPONDENCE which has reached us shows that doubt has arisen in the minds of some whether the provision that R.A.M.C. officers are automatically entitled to the bonus as from February 1st applies equally in India or Mesopotamia, where the system of demobilization and retention for the armies of occupation is not precisely the same as in Europe. This matter is governed by paragraph 4 of Army Order 54 of 1919, which reads as follows:

The bonus will be issuable to British Service troops serving in India under the same conditions as those applicable to troops serving elsewhere.

Officers in Mesopotamia, we are informed, come under Indian rates of pay.

TERRITORIAL DINNER.

It is proposed to hold a dinner of Territorial Force medical officers in London at a date to be fixed. Those who are interested in the proposal are invited to communicate with Lieut.-Colonel A. R. Henchley, D.S.O., R.A.M.C.(T.F.), care of Holt and Co., 44, Charing Cross. It is intended to form a committee to make the necessary arrangements.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on July 5th the following medical degrees were conferred:

D.M.—C. J. G. Taylor.
B.M.—N. F. Smith, L. B. Chavasse,* J. C. Dixey, H. S. Jefferies, O. B. Pratt, F. G. Hobson.

* In absence.

UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examinations indicated:

M.D.—J. W. Bride, T. H. Oliver, C. R. Sandiford.

FINAL M.B., CH.B.—Kathleen Doyle, Olive M. Gimson, A. Harris, *J. G. Nolan, Olga C. M. Payne, F. L. Pickett, Efime Ratner, A. E. H. Sadek, Annie G. Thompson, Marie Wardman, *Ruth A. Wilson.

Medicine: Elizabeth C. Davies, *Doris M. R. Tompkin.
Obstetrics: Doris M. R. Tompkin.
Forensic Medicine and Toxicology: S. Adler, May Blakiston, Phyllis M. Congdon, †J. W. Crawshaw, K. Deakin, A. M. El Aguizy, †F. R. Ferguson, P. Fildes, Evelyn A. Garnett, E. M. Greayes, J. Harris, G. E. Hayward, Sylvia K. Hickson, J. B. Higgins, F. S. Horrocks, Irma M. C. Jéhansart, F. C. Jones, Gertrude B. Leigh, H. A. Lomax, †W. E. Mason, Doris B. Norman, Emily M. Peach, H. Rosenthal, Annie Rothwell, G. Sheehan, Annie E. Somerford, G. L. Taylor, H. Tomlinson, Mary I. Turner, F. A. Van Coller, R. Williamson, J. B. Wright.

* Doris M. R. Tomkin and Ruth A. Wilson were awarded distinction in medicine, and J. G. Nolan was awarded distinction in surgery.
† Awarded distinction.

THIRD M.B., CH.B. (*Pharmacology, Therapeutics, and Hygiene*): S. Almond, G. V. Ashcroft, Nancy E. Bleakley, T. E. Coope, Muriel Coope, Eugenia R. A. Cooper, S. W. Drinkwater, Dorothy M. L. Dyson, Winifred M. Edgehill, T. N. Fisher, E. S. Frishman, E. Gleaves, W. H. Gratrix, A. Haworth, Ruth Hill, C. D. Hough, Marguerite F. Johnstone, E. Jones, J. I. Kelly, R. R. Lane, J. Leather, G. H. Lees, W. L. Martland, A. Maude, Eva le Messurier, P. B. Mumford, C. Nelson, T. O'Brien, L. S. Potter, W. E. Powell, Margaret Pownall, J. S. Robinson, F. H. Scotson, H. L. Sheehan, Margaret Single, J. W. Smith, Constance Snowdon, H. Stafford, S. N. Taylor, S. Wand, Norah M. Walker, S. Waterworth, R. Williamson, J. R. Wright. (*Hygiene*): R. S. van Aalten, Margaret McF. Corbold, Caroline M. Edwardes-Evans.

UNIVERSITY OF DURHAM.

AT the convocation held on July 1st the following degrees were conferred:

M.D. (*Essay*).—Jessie M. Murray.
M.D. (*for Practitioners of Fifteen Years' Standing*).—T. B. Sellors, A. F. Tredgold.
M.S.—W. R. E. Unthank.
M.B., B.S.—Dorothy O. S. Blair, Sujan Raj Chatterji, E. D. Charles, W. D. Forrest, A. T. Harrison, J. R. Hughes, L. W. Hearn, Ram Mansoor, H. L. P. Peregrine, T. N. V. Potts, W. Reynolds, R. Sanderson, A. H. Whyte, H. Williamson, G. R. Woodhead.
B.S.—W. O. F. Sinclair.
D.P.H.—E. W. Todd.

The following candidates have been approved at the examination indicated:

THIRD M.B. (*Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence, Pathology, and Elementary Bacteriology*).—*Oliver Colville, *Dorothy A. Dixon, S. E. H. Anderson, J. S. Brogdon, J. S. Clark, E. T. Colville, R. C. Davison, T. W. K. Dunscombe, Eskander Girgis, Barbara M. Gringing, D. F. Hocken, W. E. D. Hodgson, H. Holtby, H. N. C. Jaffé, G. McCoull, R. T. E. Naismith, C. D. Newman, T. S. Severs, L. W. Studdy, W. A. Tweddle, W. C. Wardle, Edith S. Williamson.

* With second-class honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual election by the Fellows of members of the Council was held on July 3rd. 673 Fellows voted, 667 by paper and 6 in person. The result was as follows:

Candidates.	Votes.	Plumpers.
SIR BERKELEY G. A. MOYNIHAN	404	20
SIR CUTHBERT S. WALLACE	274	33
Francis James Steward	168	51
William Francis Victor Bonney	130	15
Alfred Herbert Tubby	114	7
John Frederick Jennings...	113	17

The President (Sir George Makins, G.C.M.G.) declared Sir Berkeley Moynihan duly re-elected and Sir Cuthbert Wallace duly elected to the vacancies created by the retirement in rotation of Sir B. Moynihan and the death of Mr. L. A. Dunn.

Medical News.

DR. THOMAS LUMSDEN has been appointed Medical Referee to the Ministry of Pensions, for Westminster.

THE Lord Lieutenant has nominated Colonel Sir Robert Armstrong-Jones, C.B.E., M.D., to be one of his Deputy Lieutenants for the county of Carnarvon.

DR. JAMYE DE MORAES, a medical officer of the Portuguese navy, has been appointed Governor-General of Goa, the most important Portuguese settlement in the East.

AT the "Victory meeting" of the American Medical Association held at Atlantic City last month Dr. William C. Braisted, Surgeon-General of the Medical Department of the United States Navy, was elected president of the association.

THE following members of the medical profession have recently been called to the Bar:—Middle Temple: Major M. Dick, M.B., LL.B., I.M.S. (ret.), and Major H. J. McGrigor, M.D., R.A.M.C. Reserve of Officers. Gray's Inn: Surgeon Commander J. Stoddart, R.N., and Captain G. A. Borthwick, M.B., R.A.M.C.

CAPTAIN R. A. JONES, late R.A.M.C., who has been transferred at his own request from the presidency of the Bury (Lancs) Medical Pensions Board to that at Warrington, was recently entertained by the members of the Bury board at a complimentary dinner, when a silver cigarette box and leather suit case were presented to him.

DR. ARMLY ASHKENNY (Brockenhurst) invites the attention of assistant medical officers of health and of school, tuberculosis, and other health service officers who are Fellows of the Society of Medical Officers of Health to the draft new Articles of Association published in *Public Health* (July), especially section 4 (*b*) and section 19, which are to be proposed for confirmation at an extraordinary general meeting in London on July 18th at 5 p.m.

AT a general meeting of the medical practitioners in the Cheltenham area held at the General Hospital on July 7th, at which 27 were present, 11 of whom were demobilized doctors, the meeting resolved, *nemine contradicente*, that they were willing to act on pension boards at a rate of either one guinea per session, dealing with not more than five cases per session, or two guineas per session lasting two and a half hours.

THE Friends' War Victims' Relief Committee, in consequence of representations received from the Polish Ministry of Public Health to the effect that typhus fever was very prevalent, recently sent representatives to Poland, who reported that the statements received in this country were by no means exaggerated. There were one hundred thousand cases of typhus fever in March, and tuberculosis had greatly increased. The Polish Ministry of Public Health has undertaken a cleansing campaign throughout the country, and has invited the Friends' Committee to send a mission to that country to work in this campaign and afterwards, when help will be needed in various directions.

THE National Baby Week celebrations have been held this year in London from July 1st to 7th. On the morning of July 1st a three days' conference on infant welfare was opened by Dr. Addison, Minister of Health, at the Kingsway Hall. During the week a large number of infant welfare centres, schools for mothers, day nurseries, and kindred institutions were open for the inspection of visitors, and there was an exhibition of mothers'

handicrafts at Kingsway Hall, where mothercraft and baby competitions also were held. On July 3rd a meeting was held at the Royal Institute of Public Health for medical officers of infant welfare and maternity centres. On July 5th a health and child welfare exhibition was given in the Presbyterian Church Hall, Upper George Street.

A COMPLIMENTARY dinner was given at the Grand Hotel, Harrogate, on July 1st, by the members of the Harrogate Medical Society who had stayed at home to those who had served in His Majesty's Forces. About sixty sat down, thirty of whom were guests. The chair was taken by Dr. John Gordon Black, who proposed the loyal toasts. The toast of the evening, "The Guests," was in the hands of Dr. D'Oyly Grange. Surgeon Lieutenant O'Beirne Ryan responded on behalf of the Naval Medical Service, and Lieutenant-Colonel R. J. Morris, Major Ernest Solly, Major M. B. Ray, D.S.O., and Captain Shepherd Boyd for the R.A.M.C. The proceedings terminated with the toast of "The Chairman," proposed by the President, Dr. Bertram Watson.

THE annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at York under the presidency of Dr. Bedford Pierce on July 21st and three following days. Dr. Pierce will give an address on the afternoon of July 22nd, and on that day papers will be read by Dr. Jeffrey on a case treated by hypnotic suggestion, and by Dr. G. L. Brunton on the cytology of the cerebro-spinal fluid. In the evening, for the first time since 1914, there will be an annual dinner. On July 23rd Dr. J. W. Astley Cooper will read a paper on the value of treatment by psychological analysis, and Dr. J. E. Middlemiss will contribute an analysis of 200 cases of mental defect.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

INCOME TAX.

Z.—A doctor who served in the R.A.M.C. from December, 1914, to February, 1919, has bought a partnership which begins to run as from July 1st, 1919. His emoluments while in the R.A.M.C. were approximately £500 per annum. The emoluments of the partnership (half-share of the practice), taking the average of the last three years, are £720. He asks whether he can fill up his return for 1919–20 on the basis of his army pay.

*** It is not competent for him to average his army pay for the purpose of the assessment of his civil income; that income is to be taken for income-tax purposes as one-half of the average of the previous three years' profits of the practice. If the previous proprietors were employing a locumtenent, it is possible that the depressed profits of those years may furnish a basis for assessment as favourable to our correspondent as the one he desires.

LETTERS, NOTES, ETC.

EX LIBRIS.

DR. MACDOWEL COSGRAVE (5, Gardiner Row, Dublin) will be grateful for book-plates of medical men, and will gladly give his own in exchange. Dr. Cosgrave has recently published a list of book-plates of Irish medical men.

THE MEDICAL DIRECTORY.

MESSRS. J. AND A. CHURCHILL (7, Great Marlborough Street, London, W.1) write: The annual circular has been posted to each member of the profession. If it has not been received, a duplicate will be forwarded on request. We shall be grateful if the recipients will return the form by an early post.

RABELAIS AND AERIAL WARFARE.

DR. PERCY ROSE writes: Besides the quotation from Rabelais which Professor Osler utilized at Oxford in describing aërial warfare, as reported in the BRITISH MEDICAL JOURNAL for July 5th, there is another phrase in that author which sounds equally prophetic, though its adaptation was possibly too frivolous for use in a presidential address. *Chimaera bombinans in vacuo* is the phrase in question. Most civilians who have been visited at night by Handley Pages or Gothas would say that Rabelais has in those words correctly anticipated their feelings during the experience.

PROPOSAL TO SCHEDULE ALCOHOL WITH NARCOTIC POISONS.

AT the annual conference of the British Temperance League, held at Bradford, the following resolution was carried unanimously on the motion of Professor Sir G. S. Woodhead, K.B.E., M.D., F.R.S.Edin., seconded by Mr. F. W. Richardson, F.I.C., F.R.M.S.:

> This conference notes the pronouncement of the scientific committee appointed by the Central Control Board (Liquor Traffic) that the action of alcohol, taken in intoxicating liquors, is that of a narcotic drug not a stimulant.
> This position the League has expounded since 1838, and the conference appeals to the medical profession for collective action calling for the scheduling of alcohol with opium, chloral, cocaine, and other narcotics, and its prescription only on the lines of those drugs.
> That it (alcohol) is "from first to last a narcotic drug."—*Alcohol: Its Action on the Human Organism*, p. 38.

DIAGNOSIS OF TUBERCULOSIS BY THE COMPLEMENT DEVIATION METHOD.

DR. CHUNG YIK WANG desires to make some amendments to the text of the article on this subject published in the JOURNAL of July 5th (p. 7). After explaining that circumstances had prevented him correcting the proof which had been sent to him, he continues as follows:

In Table I of the paper the incubation time given for the fixing of the complement is "quarter of an hour at room temperature, then half an hour at 37° C., followed by a quarter of an hour at room temperature." This incubation period was adopted when the test, on which the results of the cases recorded were based, was conducted at a room temperature below 55° F. Subsequent practices have shown that in the summer where the room temperature is above this point the incubation need be shortened, for here the combination between the antigen and antibody takes place much sooner. I now, therefore, allow for the fixation twenty minutes at 37° C. in the summer and thirty minutes at the same temperature in the winter, the preliminary and subsequent incubation at room temperature being dispensed with altogether in both cases.

In Table II the figures given for the amount of complement to be employed in the test tubes denote the numbers in drops, and not in doses, as erroneously inserted.

The serum to be tested should not be much haemoglobin stained, and preferably be clear, as the presence of a large amount of this pigment has an appreciable effect on the doses of complement absorbed.

Lastly, when mention was made of the mechanical mill for grinding the tubercle bacilli I have inadvertently omitted to make acknowledgement to my friend Dr. J. P. McGowan for use of the mill which he himself devised.

THE following appointments of certifying factory surgeons are vacant: Basingstoke (Hants), Newport (Pembroke).

THE Dunlop Rubber Company are now producing Dunlop grooved tyres with an improved non-skid tread design in which it is sought to obtain the maximum durability by disposing of the bulk of the tread rubber along the line of maximum wear. This Dunlop 1919 grooved pattern will be supplied to all future orders for grooved tyres as rapidly as stocks become available.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	6	0
Each additional line	0	0	9
Whole single column	4	0	0
Whole page	12	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.